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Original Department.

Urinary Test Papers.*

By C. W. Purdy, M. D., Member of the Chicago Academy of Sciences, First Vice-President Chicago Medical Society, Member State Microscopical Society of Illinois.

Mr. President:—I need scarcely remind you, that anything that can throw additional light on the pathological conditions of the urine, and render more ready the detection of these changes, is of the very deepest importance to the medical profession at the present time. Hence the subject of urinalysis is assuming greater importance day by day.

There is scarcely a well-regulated hospital now in our land, which does not insist on the rule of a careful examination of the urine of every patient on admission, and experience has already amply confirmed the wisdom of such a measure.

Already the leading life insurance companies have discovered, that unless the same rule is insisted upon in the case of applicants, many hazardous risks are overlooked by the ablest diagnosticians which they are able to command; and five years hence, no company will dare incur the risk of neglecting this precaution.

Furthermore, the day is already dawning, when no reputable surgeon can afford to employ the knife, or chloroform, without previous observation of the same precaution.

The important, and often quite unexpected light, which a casual examination of urine sometimes throws upon a case, has become of such repeated and almost daily experience, that it can assuredly no longer remain a question, but it is the plain duty of

*A paper Read before the Chicago Medical Society, April 14, 1884.

the conscientious physician to analyze the urine of every patient whom he is called upon to attend.

I have repeatedly alluded elsewhere to the fact, that the most hopeless of all forms of nephritis, begins its march so silently, and stealthily, and proceeds to quite an advanced stage, indeed often to the very verge of extinction of life, with attendant symptoms so obscure, that the very ablest diagnosticians repeatedly overlook the presence of this grave malady, unless they make it a rule always to examine the urine of patients. I refer to interstitial nephritis, (chronic Bright's disease). Not alone is it important to make the early discovery of these grave renal lesions, when they are yet within range of medication, but also, those quasi-pathological states of urine, which are likely to lead to damaged kidneys, are important points, which the improved methods of urine-testing recently brought forward, enable us readily to detect.

The means hitherto at our command, in searching for both the presence of albumen, and sugar in urine, have possessed so many disadvantages, and inconveniences, necessitating the expenditure of so much of the valuable time of the busy practitioner, that any measures which will shorten the method, and expedite the process, are sure to prove of the greatest value to the profession.

Something over a year's practical experience with test papers, as first suggested by Dr. Oliver, has convinced me that papers could be brought to such a condition of perfection, as practically to revolutionize the old system of urine-testing, by the cumbersome and corrosive chemicals hitherto employed. Moreover, they possess the great advantages of portability, and ready applicability at the bedside of the patient.

In the Journal of the American Medical Association Jan. 19, 1884, I called attention to the comparative value of the newer tests, and described the preparation, and history of each of the albumen precipitants employed, both here, and in Europe, to date. It is my purpose now, to supplement this with a description of the application of both the albumin and sugar tests, in paper form, and to point out some of the advantages they possess over the old methods.

Messrs. Parke, Davis & Co., of Detroit, have kindly prepared at my suggestion, the series of albumin precipitants in paper form, and moreover, they are entitled to the credit of carrying into practical use, the idea of arranging also with the same series, those for sugar, in such a beautiful, compact, and portable form, as to leave very little to be desired. The profession is certainly under obligations to this enterprising firm, for this extremely neat and practical work, a sample of which I have the pleasure to show you this evening. First then, we shall consider the papers used in qualitative testing for albumin. Experience has demonstrated that the four solutions, ferrocyanic, picric, iodo-mercuric and tungstic, produce the most efficient tests in paper form. All of these are very soluble salts, thus rendering it an easy matter to heavily charge the papers with these solutions, which in turn are readily discharged in the urine under examination, and the stability of the papers is such that many months exposure to the atmosphere does not impair their powers, which remain quite equal to the solutions from which they are made.

It has been urged as an objection to the use of these tests, that they throw down other bodies than albumin, occasionally met with in the urine, unless so many precautions are observed, that it is apt to confuse the amateur in his manipulations. Experience will demonstrate, on the contrary, that in searching for albumin with these tests, they possess the elements of rapidity, simplicity, and accuracy, to a degree not approached by the nitric acid, or any other method at present known. The precipitates produced by any, and all of these papers, as Dr. Oliver properly observes, "In ninety-nine cases in a hundred, are albuminous," and if the one precaution alone of heating afterwards is observed, the precipitate remaining is positively albuminous, in all cases. Surely nothing can be more simple and easy then, for detecting albumin in urine.

But the very objections which have been raised to the use of these tests, namely, their liability to precipitate various bodies occasionally present in the urine, if these reactions are but properly comprehended, render them valuable above all other methods, where we wish to extend our knowledge of the condition of the urine, beyond the mere presence of albumin and sugar, and such knowledge is every way desirable, if we seek to know the manner in which the kidneys are discharging their function.

Aside then from the mere presence of albumin in urine, which can be so readily disposed of, let us next ascertain what additional information these tests are able to give us, bearing on the physiology or pathology of the urine.

The mercuric iodide test first claims our attention as the most delicate of all, as an albumin precipitant. This test, in addition, is a most sensitive one for alkaloids; and hence if the patient be taking these, such as quinine, it throws them out of solution in the urine, producing a haze, at first sight much resembling albumin. You will observe, however, that in the case of the alkaloids, the haze is a uniform turbidity in the solution, which does not break up into flocculi, or settle to the bottom, as in the case of albumin. Gentle heat will of course clear up the turbidity from the alkaloid. It is not necessary to use the citric paper first, to detect alkaloids; they are thrown down at once by the mercuric test. Oleo-resins, as balsam copaiba, are not thrown down by mercuric iodide in the absence of an acid, but it precipitates peptones, if present in the urine, re-dissolved by heat.

Picric acid papers throw down alkaloids, peptones, and occasionally urates, if present in the urine, the latter in excess. The picric, unlike the mercuric test, throws down oleo-resins, even in the absence of an acid, as a dense opacity. This dissolves on boiling, and reappears on cooling.

The tungstic papers differ from the picric and mercuric, in the important particular that they will not cause precipitates with alkaloids; but like the two latter, in the absence of an acid, they will not precipitate oleo-resins.

The ferrocyanic papers are likely to prove the most valuable of the series, being the least liable to error. So far as at present known, they throw down precipitates with no bodies usually met with in the urine, save albumin and urates. The latter may be avoided by first diluting the urine with equal bulk of water. This, then, is the only known test which will detect serum albumin in the urine, positively, without heat.

I had long ago observed, and in fact stated in the American Medical Association Journal, Jan. 19th, 1884, that "Its use in my hands, shows that it much less frequently produces precipitates with other bodies, than albumin, in comparison to the other new tests." I had not discovered, however, till afterwards pointed out by Dr. Oliver, that urates were the only bodies precipitated by this test, save albumin, and the importance of this point is very significant; for, as Dr. Oliver says, "In searching for albumin with this test we have only to be on our guard against urates as the only possible source of error," and the means of avoiding this has been referred to above, even without the employment of heat.

The citric papers accompanying these tests, are destined to cover a wider range of utility, than the mere previous rendering of the urine acid, and clearing up phosphatic turbidity. In a recent interesting personal letter, Dr. Oliver has called my attention to the fact, that if the citric paper be first used, before one of the albumin precipitating-papers is added, it eliminates two or three of the possible errors, (*a*) mucus, if present, is immediately precipitated by the citric paper alone, causing a milky turbidity; (*b*) oleo-resins, likewise are thrown out of solution, forming an opacity; (*c*) excess of urates, detected readily by precipitation with citric paper.

The test papers also open up another field for study, as they not only detect the presence, but also differentiate the form of albumin in urine. It is well-known that albumin may be met with in the urine in three forms: ordinarily as serum albumin; or it may be associated with an acid, when it is known as acid albumin; or, it may be associated with an alkali, when it is termed alkaline albumin. These papers, like heat, precipitate all modifications of albumin. Dr. Oliver says, "the observer, if he wish to do so, may differentiate serum albumin by heat, when the solvent power of the acid paper may be called in. Alkaline albumin may likewise be sought for by heat, aided by the previous use of the citric paper; and acid albumin may also be precipitated by it (heat) after neutralizing,(care being taken not to alkalinize) the acid, by means of the carbonate of soda paper. The separate use of these papers, therefore, enables the observer to utilize heat, not merely as a detector of serum albumin, but also as a discriminator between the three modifications of albumin."

There are other weighty advantages possessed by these new tests over the older methods, which should command their general adoption. Their surpassing delicacy, and ready applicability at the bedside, alone entitles them to precedence. All of them will unquestionably discover minuter traces of albumin than will the nitric acid method. This may readily be proven, by taking a given specimen of albuminous urine, precipitating first all of the albumin it is possible to do with nitric acid and heat; then if the precipitate be filtered off, the filtrate may be shown to contain a trace of albumin, by most any of these tests (especially the mercuric and tungstic.)

There are cases, such, for instance, as slight or intermittent albuminuria, sometimes accompanying gout, or preceding interstitial nephritis, where these tests afford us a more certain means of detecting the earliest manifestations of danger, which may often be postponed or avoided. Again, in acute febrile diseases, accompanied by albuminuria, which frequently lay the foundation for permanent damage of the kidneys, such as diphtheria, erysipelas, and, above all, scarlatina, it is clearly the duty of the physician to follow such cases to the complete disappearance of all traces of albumin from the urine, as the only safety of the patient from future danger. With such agents as the mercuric and tungstic tests, the slightest trace, even to one part of of albumin in twenty thousand, may be detected, and hence there can no longer be any excuse for the physician who assumes the responsibility of discharging the scarlet fever patient as cured, to have such cases return in a few weeks with dropsy, and, perhaps, permanently damaged kidneys.

MODE OF USING PAPER TESTS.

Urine if turbid, should not, of course, be submitted to any test, if we expect to gain accurate information. If not clear when passed, it should be filtered; if this does not clear it, a fourth of its bulk of liq. potassæ may be added, then warmed and filtered; if still not perfectly clear, one or two drops of the magnesian fluid (magnes. sulph., ammon. chlorid., aa 1 part, aqua dest. 8 parts, liq. ammon. pur. 1 part) may be added, then warmed again and filtered.

Thirty to fifty minims of the suspected urine may be poured into a sixty-minim test tube, and its reaction first noted with litmus paper. If slightly acid, one citric paper is introduced, but if alkaline, two or more must be used to insure acidity. Next, one of the albumen precipitants is added and any change noted. Instead of above method, both the citric paper and the albumin precipitant may be allowed to fall into the test tube together. If albumin be present, a milky cloud will quickly form about the papers, changing slowly into flocculi, and shortly settling to the bottom of the tube. Such is the usual reaction with small quantities of albumin, say below one-sixth of one per cent. But if albumin be present in larger quantity, it will not produce a generally diffused milkiness through the solution, unless the tube be shaken, but will coagulate about the papers in solid lumps, and fall in pieces to the bottom. Other methods are described by Dr. Oliver, which may be resorted to if desired. He says, "Those who prefer to develop a zone of precipitation along the plane of contact of a test solution, and the urine, can do so with these papers as follows: Two tubes, or a tube and a wine-glass are required. Into one the reagent paper, rolled up, is placed, with about fifteen minims of water, and set aside; while a similar quantity of urine is put into the other tube, with a citric paper. The reagent (now in solution) is taken up by the pipette and allowed to trickle down the side of the tube in which it will either glide over the urine, or collect below it." I think it will be found preferable not to agitate the contents of the tube in testing; for it will be observed that all the urine above the papers will remain clear, offering a strong contrast to the milky precipitate of albumin below. In this connection I may mention a suggestion by Dr. S. C. Smith, of Halifax, which is to bend the papers into a circle, so as to fit inside the test tube, and then push them down, say, within an inch of the bottom. The tube is then filled with urine. If albumin be present, the whole of the urine below the papers becomes opaque, while that above them remains transparent and unchanged.

TEST PAPERS FOR SUGAR.

All agents employed in testing for sugar, are either caustic alkalies, or bodies associated with an alkali. The principle of construction of test papers for sugar depends upon the fact that in the latter case it is not always necessary to use a caustic alkali. For instance, in the cases of mercuric cyanide, picric acid, and Trommer's copper test, the substitution of soda carbonate for the caustic alkali will answer quite well. Papers, therefore, may be made charged with such agents, and separate papers, charged with soda carbonate, may also be kept in the case for use; or, the paper in some instances may be doubly charged with the reagent and the soda carbonate together; thus necessitating the use of but one paper in testing for sugar. The first I think will be found the better way in most cases, for two reasons: First, we may meet with a saccharine urine of exceptional acidity, rendering it necessary to add an extra paper of soda carbonate. This contingency may be met in another way, by being careful to operate upon only a small quantity of urine at a time. The second and most important advantage of separate papers is the fact that the agents, if kept separate till required, at the time of using produce a fresher test solution. Every one is familiar with the unstableness of solutions for the most part used in sugar testing. In fact this has been the great bar to perfecting a system of sugar testing up to this time; even Fehling's test becomes unreliable if kept too long.

The copper test paper is best made after the method of Trommer, that is, charging the paper with solution of cupric sulphate. This and the soda carbonate paper are introduced into a test tube containing 30 minims of urine and heated to boiling. If sugar be present the usual reduction will be observed.

Picric acid papers possess the advantage that they may be carried in the case and used in testing for both sugar and albumin. Used with the soda carbonate paper, the picric upon boiling with urine assumes a dark color if sugar be present.

The indigo carmine test, brought forward by Dr. Oliver last May, is the most striking and beautiful in reaction of any test with which I am familiar, and it is likely to prove the most reliable, both as a qualitative and quantitative test for sugar, of all. This test depends upon the fact first observed by Méhu, of Paris, in 1880, that when the carmine of indigo is treated with soda carbonate and a solution of glucose, or saccharine urine, the blue color is converted gradually into violet, then into various tints of red, and finally into yellow. Dr. Oliver has pointed out that the "indigo carmine and carbonate of soda in water, undergoes a gradual change, which renders the test unfit for use in that form. The test papers, however, not only meet these disadvantages, but amplify the powers of the test. The constituents being dry, remain unchanged; and when dissolved out of the papers, they furnish a freshly prepared solution at each observation." The method of using this test is as follows: Place in a test tube containing thirty minims of water, a paper charged with the carmine of indigo, and one of the soda carbonate. Gently heat till the indigo is discharged into the water, then add one or two drops (no more) of the suspected urine, and boil. If sugar be present, the blue quickly changes to a violet tint, this in turn, deepens and passes into purple, which next shades into reddish purple, followed by various tints of red; these quickly merge into orange-red, and orange, and at last the solution becomes of a straw color, which remains, however much boiled, and the paper now assumes the same yellow color.

The compass of this wonderful color reaction, embraces all the prismatic colors save green, and their kaleidoscopic play before the eye of the observer in testing, is one of most exquisite beauty.

It will be noted on standing the tube aside, that these colors slowly return, in the inverse order to which they appeared, especially in the upper portion of the tube, which is due to re-oxygenation, through atmospheric contact. This may be hastened, as well as diffused through the whole tube, by continuous agitation. The tint reached in any particular case, depends upon the quantity of glucose present in the urine. It may stop at any of the colors reached, but made to proceed to yellow by adding more glucose to the solution, and upon this fact depends the workings of the quantitative tests used in paper form.

I had hoped Mr. President, to be able to bring before the notice of the society this evening, the quantitative test papers for albumin and sugar. But having not yet perfected my standards of opacity for the former, I shall be obliged to postpone this till a future occasion, and content myself for the present with demonstrating to you the reactions of those I have just discussed.

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NOTE.—It seems desirable to add a word or two of precaution, in reference to the copper test for sugar, in paper form. As is well known, all the tests for sugar become unstable, if kept long in solution; and we can not expect less liability to change in these salts, when deposited on porous paper. Thus it will be found that the copper papers are liable to deteriorate with age. Again, it is an undoubted fact, that the copper salts make more reliable tests for sugar, with a caustic alkali, but when we substitute the weaker alkaline carbonate, and it meets with urine of considerable acidity, sufficient neutralization occurs often to prevent reaction, and the test fails. For these and other reasons I do not rely on the copper test papers for detecting sugar in urine, and since we have those which we can depend upon with certainty, as the indigo, and picric acid, it would seem, for the present at least, wisest to exclude the use of the cupric papers, for diagnostic purposes, except, perhaps, as corroborants.

Boracic Acid in the Treatment of Purulent Inflammation of the Middle Ear.

BY C. W. TANGEMAN, M. D., CINCINNATI, OHIO.*

THE introduction of new remedies is one thing, and to establish one as a recognized therapeutic agent is another. Absolute facts in medicine are few, even at the present day. Aural therapeutics has never made very rapid strides, not even in the past decade; there is perhaps no department in the science of medicine in which there has been so much literature, containing so little exact knowledge as in that called "Otology."

The anatomy and physiology of the ear have re-

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ceived the most accurate attention; the treatment has been crude and unworthy of the knowledge which should have been its basis. An inexplicable carelessness with regard to the diseases of so important an organ as the ear, has been our heritage from the fathers.

Roosa wrote: "It is to be feared that even now, many wise and skillful men do not know that to drop stimulating applications upon a membrane which they have never examined, to probe an ear for wax they cannot see, is empirical, and every conscientious physician should hold it in abhorrence." This is true in our own day, and with men who have opportunities of knowing better. Prior to the year 1840, there was not a single ear clinic in Germany. Saunders and Cooper attempted to establish one in London, about the beginning of the 19th century, but failed, on account of its being so unsuccessful.

Nearly all the large cities of Europe and America enjoy the benefits, at present, of ear clinics, but it has required one whole century to establish them. There are very few colleges, in the United States, that have a separate chair of otology, and aside from clinical instruction, (which is optional,) students do not hear a single disease of the ear spoken of during the entire course of lectures, not even such diseases as come to the notice of the general practitioner, almost daily on his rounds, diseases that are sequelæ of the trouble for which he is treating the patient. That such carelessness will bear fruit could not be avoided, and the result we have in the fact that three-fourths of the physicians to-day are not competent to differentiate between an inflammation of the auditory canal and the middle ear.

Breezes that are scented with superstition and ignorance, from the dark ages, continue to blow over us; not unfrequently can be heard the pernicious advice: "You must not attempt to have the discharge from your ear stopped, because it is an excretion from the brain, etc." If individuals only be taught to say nothing but that which they know positively, otology would undoubtedly, ere the close of the 19th century, rank foremost as a specialty, in the art of medicine. It is often a pre-requisite, that a remedy should be mild in its action, and simple in its application, in order to insure success.

In boracic acid we possess a remedy which is at once efficient and also seems to be perfectly safe to be applied by any physician, or the patient himself. The disease in which it has given such universal satisfaction is chronic suppuration of the middle ear (called by the laity "running from the ear.") This disease which has been regarded so lightly has a great mortality—it is so lightly regarded that a large number of people die annually from its direct results, under the observation of physicians who have not even a suspicion that the disease of the ear and the ear alone was the direct cause of death. It occurs so frequently that the subject is not alone of interest to the specialist of otology, but also to the general practitioner, under whose observation nearly all of these cases come first. Boracic acid as employed in therapeutics, is manufactured; it must undergo a process of purification, otherwise its action will be too much that of an irritant. It possesses the properties of a disinfectant and an antiferment. It may be employed in the form of a solution (alcoholic or watery), the powder incorporated in an unguent, or the impalpable powder in its pure state, according to the indications of the case. It is not very soluble in cold water, but quite soluble in hot water, in which form it may be used as a dressing during operations. When the liquid cools it leaves a fine coating of the acid on the tissues to which it has been applied. In an alcoholic solution the liquid rapidly evaporates, leaving the parts dry, yet covering them a coating of the drug, which is a most admirable dressing for ulcers and fœtid sores. In the form of an ointment which may be made of any strength, and put into any unguent (cocoa butter, cold cream, lard or vaseline), its range of applicability is very much increased. It does not cause the slightest pain when brought in contact with the most sensitive structures, nor does it cause any irritation when applying it to an inflamed tissue. Some little difficulty may be experienced in making a smooth, thoroughly incorporated ointment, since the crystals slip from under the pestle, but this may be overcome by making use of an impalpable powder, or dissolving the crystal in ether, which rapidly evaporates, and leaves a mass finely triturated. This brings us to the use of boracic acid in powder form. The most prominent symptoms of a purulent inflammation of the middle ear is the discharge of pus externally, which emits a sickly nauseating odor, banishing grown people from society, and children from their play-mates.

This disease is not self-limited in the sense in which the term is generally used. Its continuation is dangerous to hearing and life. The close proximity of a purulent inflammation to the brain, and other important structures must not be forgotten. The entire tympanic membrane and the chain of ossicles are sometimes swept away, causing an irremediable loss of the sense of hearing. Despite this all the advice many physicians give to this class of sufferers is to shrug their shoulders and admonish the patient not to allow anyone to interfere, since the discharge is an excretion from the brain, which dare not be stopped, and thus this pernicious advice, first taught by Fallopius, is perpetuated from generation to generation, at the discomfiture of the patients, and the pecuniary loss of the physician. In cases where treatment was recommended in former days it had no underlying basis, consequently the results were nearly always failures.

Bezold was the first to advocate the use of boracic acid in diseases of the ear, and its efficiency and simplicity of application won for it a reputation until it is accepted as being the best remedy that we possess, not only in simple cases but also in cases where the middle ear is filled with a furuncular mass of tissue. Boracic acid causes these granulations to shrink and disappear, it restores the mucous membrane to a normal condition, after which the perforation in the tympanum can close up. Simple acute cases are often cured by thorough cleansing of the parts by means of absorbent cotton wrapped on a probe. The syringe should never be used for the purpose of removing pus from the middle ear; neither should a patient be intrusted with the important duty of cleansing the ear. Every suppurative process is dependent on the formation of bacteria which may continue so long as there is any moisture in the tympanic cavity; absolute dryness is the ideal of a germicide. The injection of water for the removal of pus cannot be recommended, since the anatomical con-

dition with the pathological state is such as to retain some moisture, thereby forming a nidus, almost a culture material for the propagation of the micro-organism, and the continuation of the formation of pus. When absorbent cotton is used on a probe the parts can be cleansed more rapidly and at the same time left in a dry condition. If the perforation through the membrani tympani is small, so as not to admit a pledget of cotton through the opening, the pus may be blown out by inflating the ear with Politzer's air bag. This portion of the treatment, though seemingly insignificant, should never be omitted, as the most scrupulous cleanliness is an important factor in the treatment of these cases. Many specialists now simply blow a little of the boracic powder into the ear, but I would suggest to fill the meatus completely, packing it solidly against the diseased structures. This suggestion would seem as though it was open to criticism, but it can be demonstrated practically to be perfectly safe. Applied in this mode the drug serves two purposes: it not only acts as a disinfectant (smaller quantities would be sufficient for that purpose) but it has the property of absorbing moisture and keeping the diseased structures in a dry condition practically, for some time; another indication is in the fact that boracic acid is only efficacious when in absolute contact with the diseased structure; when a portion is dissolved there is always some more in the meatus to supply the demand. If in a given case the powder is not all dissolved, but hardens in the meatus, it need cause no alarm; it can remain there until it gradually crumbles away. This is always a criterion to go by: if the powder remains dry there is no pus underneath it. The history of this class of cases shows that no remedy can be recommended simply because it has cured a given case, or a number of them. It is not unfrequent for a case to be cured by a single treatment without the use of a therapeutic agent. To attribute special properties to a remedy requires years of observation and a large number of cases. This drug has been in use at Prof. Seely's ear clinic for four years, during which time it has given very satisfactory results; but it cannot be advocated as a specific remedy.

To illustrate the statements above made that the drug must come in contact with the diseased structure, and secondly, that it is always necessary to know the exact pathological condition before we can credit the effect of a drug or give a prognosis, I will briefly give the history of the following case: Nick. H., æt. 18, robust and hearty, made application at my office for the relief of a "running ear." On examination I found the bottom of the meatus filled with pus, the membrana tympani was completely destroyed, the middle ear filled with a granular mass, while hearing was entirely absent on the affected side. The disease dated from an attack of scarlet fever 7 years ago. After thoroughly cleaning the ear it was packed with boracic acid; 24 hours later the powder had been all melted, so the treatment was repeated, and continued for 4 weeks, but the discharge continued same as before. The fungous mass, which was quite sensitive and bled on the slightest irritation, had now disappeared to such an extent that a more thorough examination could be made, which revealed an opening that communicated with the mastoid cells, from which the pus continued to flow. A few applications of chromic acid brought about a rapid disappearance of all the foreign tissue and enlarged the sinus to the cells, where a spot of necrosed bone was found to be the cause of the discharge.

This was a typical case in every respect. The long-continued discharge had changed the middle ear so as to destroy hearing. The patient had an idiotic appearance; his employer had discharged him on account of the offensive odor from his ears; his associates shunned him. All remedies that had been tried had failed because the pathological condition was not known. The boracic powder only corrected the fetor, but did not stop the discharge. A saturated solution in alcohol had a better effect since it carried the acid to the seat of the disease; and after 5 months' patient treatment the patient was cured.

Boracic acid has been combined with other so-called antiseptic drugs, forming a compound, but undoubtedly the active principle of the mixture was the boracic acid. It has been combined with tincture of marigold, which lays claim to antiseptic and healing properties; the crystal is dissolved in the alcoholic menstruum, which is afterward evaporated, leaving a compound powder applied the same as the simple powder. The results do not seem to be any better. It has also been combined with the much-lauded iodoform, which shortly after its introduction seemed to promise a great deal, but specialists soon saw that iodoform in otology would be of little importance either alone or combined with boracic acid. It really should be banished from therapeutics on account of its inefficacy and its unpleasant odor. Bürkner, of Göttingen, reports very favorably on the use of the new remedy, but at the same time he recognizes the fact that occasionally cases present themselves where all the known remedies have failed; therefore we must constantly be on the look-out for some drug that may be substituted when the old ones have failed. The old plan of astringents and caustics finds many followers, and in ordinary cases cures undoubtedly are effected, but cleanliness might be the main factor in the treatment. The age of nitrate of silver as a therapeutic agent in diseases of the ear, I think, belongs to the past. While the proper use of chromic acid is a valuable agent, but on account of its great activity it must be cautiously used. B. also has used a solution of corrosive sublimate in 0.1 per cent. solution both as an injection to clean the ear, and as a therapeutic agent, to be dropped into the ear. Sublimate is the most powerful parasiticide known, which is also a good property in a drug used in purulent middle-ear diseases; but it does not seem to act so well when it is confined, as in the case of the ear, as it does in other places. I have employed it in strengths ranging from one grain to the ounce up to one grain to the pint, and my observations have been rather against than in favor of sublimate, notwithstanding the high authority mentioned above. Aside from its irritating effects, it leaves the ear in a moist condition, which has always seemed to me objectionable. Landesberg, of Philadelphia, also reports satisfactory results with boracic acid, but he employs the compound calendula powder. Boracic acid has now been in use sufficiently long, that we may predict in what class of cases its use will likely be followed by good results, while we are not so positive concerning the action of many of the older remedies, such

as astringents and caustics. Corrosive sublimate cannot be recommended to the patient unless he is quite intelligent, while the acid is absolutely harmless, causes no pain, and can be obtained by the poorest patient. On account of its simplicity we recommend its use first, and, if it fails, mercury, astringents and caustics may be given a trial in turn. There is only one precaution to take, namely, to employ only a perfectly pure article in an impalpable powder.

The boracic acid used in medicine, is manufactured from borax, by the use of sulphuric and hydrochloric acid, which act as irritants, therefore they must be removed, otherwise the article is impure, and will irritate when applied to an inflamed surface. The only reliable preparation in the market at present is "Morson's" impalpable powder of boracic acid, an English preparation. If the powder is not thoroughly triturated, the sharp little crystals will hurt the ear. That the remedy has efficient properties is proven by the fact that it is largely used in commerce, as a conserving salt, for packing and pickling meat. It is a more active anti-ferment than salicylic acid, which is quite an important feature, since salicylic acid was injurious in the quantities that were necessary. The question of how much boracic acid will the system tolerate, and is it an absolutely safe remedy, must be answered with some caution, until further observation has been made. Bruzelius, in "Schmidt's Jahrbücher," reports a case of poisoning caused by the use of a four-per-cent. solution of boracic acid, which had been administered as an injection in chronic diarrhœa. Molodenkow reports two cases of poisoning and death from boracic acid, in the St. Petersburger Medicinische Wochenschrift. In one case a five-per-cent. solution was employed to wash out the pleural cavity, after an operation for pyo-thorax, and in the second case the same strength solution was used to wash out an abscess in the gluteal region. Reports on the toxic effect of boracic acid are rare, but it evidently is not as bland a drug as it was supposd to be.

On the Detection and Estimation of Sugar in the Urine. 1. Qualitative Tests.

By A. B. Lyons, M. D., Detroit, Mich.*

THE introduction recently of Dr. Oliver's bed-side tests, has given renewed interest to all that pertains to urinary analysis. When the physician can carry in his vest-pocket all the appliances necessary for the full examination of the urine, he will avail himself much more frequently than has been his habit, of this valuable aid in diagnosis and prognosis. The mode of using the test-papers is easily learned, but it must be distinctly understood that their intelligent use pre-supposes a familiarity with the several chemical tests which they represent. The test-papers merely provide the physician with his reagents in a portable form, but these will be useless without a thorough acquaintance with the indications which these reagents are capable of affording, and the conditions under which they may be expected to give these indications. I propose, therefore, in the present paper, to review the various tests by which we seek to discover the presence of sugar in the urine.

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Some of the constituents of the urine can be readily separated, and their identity thus established in the most conclusive manner possible. Thus by the addition of a strong acid we may cause, even in the undiluted urine, a crystallization of the insoluble uric acid, the brick-dust deposit scarcely needing the aid of a microscope to make certain its character. If the specimen contains albumen, more than a trace, it is only necessary to apply heat, to cause a separation of that abnormal constituent, which can then be identified by various tests. Now we have no simple means of separating sugar thus from the urine in case it is present, and no reaction by which sugar in solution can be absolutely discriminated from all other substances—especially when it occurs in a fluid of such complex character as that under consideration.

When we speak of sugar in this connection, we always mean that particular variety of sugar which is present in the urine in diabetes mellitus—and which is identical with grape sugar, so-called, or more properly glucose or dextrose. The particular property that has been fixed upon as a means of identifying glucose is its disposition to absorb oxygen—a character in which it differs strikingly from sucrose or common sugar. Nearly all the tests for diabetic sugar give only negative results with cane sugar (sucrose), and in fact, are often employed to detect glucose as an adulteration in sucrose.

By far the most important of the older tests for glucose is the copper test. If to a solution containing this sugar there be added a little copper sulphate, followed by excess of liquor potassæ or other fixed alkali, there is produced a clear blue solution. In absence of the glucose the copper would be thrown down as a pale blue hydrate on addition of the alkali, and if the mixture were boiled this blue precipitate would become black, being converted into cupric oxide. The behavior of the clear blue fluid, however, containing glucose is different, and very characteristic. When heated to boiling it changes from transparent blue to opaque yellow, and speedily deposits a yellow or red—always ultimately red—precipitate of copper sub-oxide (cuprous oxide), a portion of which attaches itself firmly to the surface of the test-tube. If the quantity of sugar is moderately large, the change takes place almost instantly on applying heat; if only a trace of sugar is present, the fluid must be boiled for a minute or two before the reduction takes place, but the reaction is liable to be obscured by precipitation of the black oxide of copper. To avoid this difficulty, it is customary to add to the copper solution Rochelle salt, the tartaric acid of which prevents precipitation of cupric hydrate on addition of an alkali.

Fehling's solution, which is used more commonly than any other modification of the copper test, consists of:

Copper sulphate,	34.64 grammes.	(534.6 gr.)
Rochelle salt,	173. "	(6 oz. av.)
Sodium Hydrate,	40. "	(617.3 gr.)
Water to make one litre.		(33.81 fl. oz.)

Of this solution one c. c. (♏ xv) is completely precipitated by 0.005 (gr 1-11) of glucose, and it is intended for quantitative as well as qualitative tests. This solution, however, is notoriously unstable. Even when kept in the dark, and in well-stoppered bottles it soon deteriorates, so that when boiled sub-oxide of

copper is thrown down—and it is, of course, useless as a test for sugar. If the solution is prepared carefully from pure materials with distilled water, without application of heat, and is then at once put up in small flasks, hermetically sealed and kept protected from the light, it may be preserved a long time, and I have found the contents of such flasks as prepared by Parke, Davis & Co., in a perfect state of preservation two years after they were put up. It is best, however, as a rule, to prepare the solution extemporaneously. For this purpose two solutions are kept, one consisting of copper sulphate crystals, 69.28 grams (505.9 grs.) pure sulphuric acid, 1 c.c. (8 ♏) water to make one litre (one pint), the other of 350 grams (6 oz. av.), Rochelle salt, recrystallized, 100 grams (730 grs.), caustic soda, water to make one litre (one pint). These solutions mixed in equal volumes reproduce Fehling's solution.

In quantitative tests it is, of course, necessary to prepare the solution in these rigorous proportions, but it is found that variations in the proportions of the constituents affect materially even qualitative results; consequently it is best to adhere pretty closely to the formula in any case.

To use the solution it should be first diluted with four times its volume of water, or else the solutions should be made of one-fourth the prescribed strength. Place in a test tube about 60 minims of the diluted fluid. Heat to the boiling point, and then drop in a few minims of the solution to be tested. When applying the test to a specimen of urine, it is important that the first addition shall not exceed two or three drops, since certain constituents of the urine otherwise may obscure the reaction by preventing the precipitation of the cuprous oxide. The presence of sugar is indicated when the quantity is considerable, by an immediate precipitation of the sub-oxide. When only traces are present, the blue color of the solution is partially or wholly discharged, but precipitation takes place only after some minutes. If no effect is observed from the few drops first added, the test solution having been kept fifteen seconds at a boiling temperature, more of the suspected fluid is added, and the effect observed. This is repeated, if necessary, until about 20 minims of the fluid have been added, when, if there is no separation of cuprous oxide, even after the mixture has stood 15 or 20 minutes, it may be decided that sugar is practically absent.

A few years ago, Prof. W. S. Wayne proposed glycerine as a substitute for the Rochelle salt of Fehling's solution.

It is said that the solution, when prepared with glycerine, is quite permanent. I have never put this to the test, having had such abundant experience of the instability of the ordinary copper solutions. I prefer to keep two separate solutions, which may be mixed when required for use. The solution resembles in color and properties, that of Fehling, and when the proportions of the formula are adhered to, proves equally sensitive as a test for traces of glucose. Prof. Wayne's formula is: Copper sulphate, 30 grains, caustic potash, 150 grains, pure glycerine, 2 fluidrachms, water, six fluid ounces. It is hardly necessary to point out the importance of testing the glycerine itself for glucose—not an uncommon impurity, before using it for this purpose. On the whole, however, with this proviso, I am inclined to give glycerine the preference over Rochelle salt.

In applying the copper test to urine, it must be remembered that certain constituents of that fluid may modify the results. Albumen, if present, must be removed, best by boiling with the addition of sodium sulphate Uric acid, which is always present in the urine, in small quantity, exerts a reducing action on copper salts, precisely similar to that of glucose, but less energetic, and the reaction does not take place without application of heat.

If, therefore, a faint indication of sugar is obtained when the test is applied in the usual way, a second specimen must be tested without application of heat. If really due to sugar, the reduction will take place in the cold in the course of twenty-four hours, with deposition of cuprous oxide.

Inosite, which is sometimes present in the urine, reduces the copper solution, but without precipitation of oxide. The blue color of the solution is merely changed to green. Kreatinin tends to prevent the precipitation of cuprous oxide in urine containing sugar. The quantity of this constituent is, however, generally too small to interfere with the detection of the sugar. Ammonia, which is constantly present in stale urine, has a similar action, and may lead the novice to overlook even considerable quantities of sugar. The blue color of the fluid is discharged, but no deposit is obtained until the ammonia is expelled by prolonged boiling. Many substances which may be accidentally present in the urine, give fallacious indications, having, like glucose, the power of reducing copper.

These difficulties are dwelt upon in detail in the various text-books treating on the subject, and the means given by which one may overcome them, but for the medical man with only limited time to devote to details of manipulation, these refinements are of no practical value. Other tests as we shall see, are free from some of the difficulties that surround the use of the copper test. As a bed-side test, especially, it must give place to others equally delicate, which are more portable, but for exact quantitative estimations, it must continue to hold the first place among the tests for sugar. Attempts have been made to combine the constituents of this test in some way, to render the test available at the bedside. Pellets, consisting of copper sulphate, sodium carbonate and Rochelle salt have been prepared, and paper has been impregnated with a solution of these salts, but thus far no such combination has proved to have sufficient stability to command the confidence of the physician. Test papers may be prepared, the copper salt being kept separate from the other constituents; but there would be no advantage in these over the indigo test papers, which are absolutely unchangeable.

Dr. Pavy is accustomed to add to the copper test fluid aqua ammoniæ, and to depend entirely on the discharge of the blue color of the fluid for evidence of the presence of sugar, and the plan is a good one when the quantity of sugar is considerable. In quantitative estimations of sugar it permits the end of the reaction to be more readily observed, and has become popular with many chemists. For the approximate estimations undertaken by the physician, it presents no great advantage over older forms of the copper test.

Moore's test serves to detect with certainty the larger quantities of sugar in the urine, but has never become popular among English and American physicians. A test closely resembling it, recently introduced by Dr. Geo. Johnson, is likely to take rank as among the most valuable in our possession. In Moore's test the urine was simply boiled with a solution of caustic potash for a few minutes, the presence of sugar manifesting itself by change in the color of the fluid. In Dr. Johnson's test there is added to the urine a little picric acid, as well as the alkali, and the urine is boiled one minute. If sugar is present the color becomes garnet-red, or even brown, owing to the formation of picramic acid, [$HC_6 H_2 NH_2 (NO_2)_2O$]. Normal urine always shows a change of color under this test, so that it is of little service in indicating the smaller amounts of glucose it is important to detect in the incipient stages of diabetes. This is not due to want of sensitiveness in the reagent; in this respect the test, indeed, surpasses all others, but unfortunately certain constituents of the normal urine produce the same reaction—prominently kreatinine—and hence we must be always in doubt in applying the test directly to the urine, whether we have sugar present or not, unless the quantity be as high as one grain per ounce,—estimated by the indications of this test.

The bismuth test is comparatively little used, and has not been studied with as much care as some of the others. It resembles in principle the copper test, depending on the reducing action, in alkaline mixtures of glucose. It is, therefore, probably liable to similar fallacies, but not in the same degree; hence it is of value as a confirmatory test. The urine is mixed with an equal volume of a solution of sodium carbonate, a little bismuth subnitrate, or subcarbonate added, and the mixture is boiled for some time. In case glucose is present the bismuth salt is partially or completely reduced and on settling forms a black deposit, which generally assumes the form of a distinct ring or zone above the light-colored undecomposed salt. Albumen or other compounds containing sulphur must be excluded in making this test. One great advantage it possesses over the copper test is that the reagents required can be readily carried in the pocket medicine case. Bismuth, indeed, is generally so carried already, and the sodium carbonate may be easily added, or the latter may be carried in the form of test papers. The picric acid test may also be put in the form of test papers, but the quantity of alkali required (sodium carbonate), is larger than can be supplied by a single test paper, and it is better to carry an additional supply of the carbonate in substance. Two or three grains of this, dissolved in 30 minims of water with the addition of one of the picric acid test papers, furnish the test fluid, to which should be added not more than 5 minims of the urine to be tested.

The fermentation test is the least used, but certainly the most conclusive of all. As a qualitative test it labors under this great disadvantage, that it requires time (several hours), to complete the experiment. The reagent, too, is one which will not keep indefinitely. For quantitative estimations, however, of sugar in the urine, fermentation affords a ready method of which the physician may advantageously avail himself. The plan proposed by Dr. Roberts, in 1861, is extremely simple, and has been proved by careful experiment to be for all practical purposes sufficiently exact. The specific gravity of a specimen of the urine (at 60° Fahr.), is determined accurately, a little pure washed yeast is added to it, and it is set aside in a warm place (temperature 20° to 24° C. (68° to 75° F.), until fermentation is complete, which will be generally within 24 hours. The specific gravity of the urine is then taken a second time, at exactly the same temperature as before, and the loss in density is noted. It has been found by experiment that a loss of .001 corresponds with a quantity of sugar (0.219%), equal to about one grain to the fluidounce. The only requisites to success in this estimation are, an accurate instrument for determining the specific gravity, and strict attention to the temperature at which the observations of density are made. All other methods of making quantitative estimations of sugar, require more or less skill and practice on the part of the operator.

The test known as Mulder's and described in many of the text-books, has never until recently been brought into prominence in connection with urine analysis. Vaughn says, "This test is not very suitable for application to the urine unless considerable sugar be present," and other writers are content merely to mention it among recognized tests for sugar. Dr. Oliver, however, has recently called attention once more to this nearly forgotten test, and pointed out its superiority over the tests now in common use. The reagent employed is indigo carmine, in conjunction with sodium carbonate. If to a solution containing a trace of glucose, there be added enough of the indigo carmine to give it a distinct blue tint, together with a little sodium carbonate, and the mixture be raised to the boiling point, the blue color will be observed to change to purple, amethyst, red, and finally to fade to a pale yellow. If the quantity of sugar is extremely minute, the color merely changes to purple or red. The moment the oxygen of the air reaches the cooling solution its color is restored, passing in inverse order through the same shades as in fading. While the solution remains hot, it can be rendered blue by agitation, and will again lose its color when left at rest a few seconds, and this pretty experiment may be repeated many times if the fluid be kept hot.

Indigo carmine is most conveniently kept in the form of a test paper, and, in fact, forms one of the most valuable of the series put up by Parke, Davis & Co. If one of these papers, together with a soda paper, is put into a test tube containing 30 minims of pure water, the indigo carmine is speedily dissolved out, forming a clear blue solution. If the tint of the solution is too deep add water, until the fluid is only of a pale blue. Pour off now, into another test tube, 30 minims of the solution, add one minim of the urine to be tested, and boil. If sugar is present, the color of the solution will change, and the rapidity and extent of the change will serve as an indication of the amount of sugar present. If the color of the solution is completely discharged in less than a minute, repeat the experiment with one minim of the urine, previously diluted with an equal volume of water, and so, by a succession of experiments you may ascertain approximately the proportion of sugar present. Only one minim of the urine, or at most two, should be employed, at least in the first test. Normal urine itself will discharge the color of

indigo if added in sufficiently large quantity; generally as much as five minims are required to produce any change in thirty minims in a pale blue solution.

The researches of Dr. Oliver have shown that no known constituent of the normal urine affects the indigo solution, unless sugar itself (glucose) or inosite be normal constituents of that fluid. He is inclined to believe that the latter is present oftener than has been generally supposed, and that it may be this substance which produces the change observed in the case of normal urine.

However this may be, it is certain that when sugar is present as a pathological condition, this reagent is capable of detecting it with at least as much certainty as Fehling's solution, and that those constituents of the urine which act as disturbing elements in the use of other tests do not affect the indications of this. Neither uric acid nor kreatinine, which are present in the normal urine, influence the result. Albumen is without effect, and of the substances which may be accidentally present in the excretion of patients undergoing medication, the only ones which reduce indigo are the salts of iron and tannin.

The reagent possesses, therefore, a great advantage over all others. It is equal in delicacy to any; its indications are more nearly infallible, and the reagent can be carried in a vest pocket case in the form of a test paper always ready for use.

The physician who has once familiarized himself with the use of this reagent will certainly abandon all others, except as confirmatory of the indications of this.

Cholera Infantum, Cerebro-Spinal Meningitis, Etc.

By Alban S. Payne, M. D., Late Professor of Theory and Practice of Medicine, Southern Medical College, Atlanta, Ga.

IN the Transactions of the Medical Society of Virginia for 1880, page 213, the following occurs: "Honorary Fellow, Dr. Alban S. Payne, late of Farquar County, was invited by the president, Dr. Hunter McGuire, to give his views on the subject of cholera infantum. Dr. Payne said he thought his long residence (thirty-six years) in one of the most mountainous and healthy sections of Virginia, peculiarly unfitted him from being able to throw any light on this interesting and important subject. He thought physicians in large and crowded cities were the ones we might reasonably expect to furnish this society with the largest amount of useful knowledge in regard to the pathology as well as to the successful treatment of cholera infantum. Yet he was not unmindful of the fact that the first several years of his own practice had been spent in a large and crowded city; and, moreover, during the last thirty-six years of his practice he had encountered many cases of cholera infantum. These cases were often cases sent to his section from the prominent cities of our common country. Coming often from a warmer climate to a colder, frequent relapses occurred, more especially in "teething children," and these cases of relapse always proved themselves to be grave and serious.

He thought the vomiting in cholera infantum peculiar and characteristic, and if he might be allowed to coin a word, being "spouted out" rather than vomited up. Or, if you please, vomiting without any symptoms of nausea. This he believed to be indicative of irritation about the upper portion of the spinal cord and base of the brain, and by reflex action was transmitted to the sympathetic ganglia of the *primæ viæ*; he does not deny, but thinks it probable, that occasionally the trouble commences in the mucous follicles of the intestines and is by the same reflex action carried to the spinal cord and to the lower portion of the brain. In such cases, in his opinion, we have three indications to meet: First: Either to prevent collapse, or, if we find the patient in a state of collapse, to rouse the energies of the system and to restore to the circulation its equilibrium. Second: To correct the morbid, acrid, acid secretions, and to render them normal and natural. Third: To rouse the secretory organs to a natural performance of their secretory functions.

He did not know, until this evening, what was the subject for discussion. He has, therefore, given this subject no thought up to this time, as a preparation for his remarks. If continued until our next annual meeting he will give the subject some consideration, and will be glad to contribute his mite to the general fund of information to be then elicited by discussion."

In obedience to this my promise I have given this subject much reflection, and I unhesitatingly endorse all I then said at Danville, Virginia, in the year 1880.

Cholera infantum is so called from its resemblance to Asiatic cholera. In the latter there is always great depression of nervous centres; this depression seldom or never precedes the attack. In the former there is at some period of the attack excessive reflex excitement, and this may, and in my opinion often does, precede any evidence of intestinal trouble. In teething children I have found their eyes blood-shot, an accelerated pulse, a dilated pupil, an increased temperature, morbid wakefulness, or the reverse, with sudden starting as if frightened, and each paroxysm of the latter, accompanied with or immediately followed by the sudden and involuntary ejection of the contents of the stomach. This ejection seems to take place without any effort on the part of the patient and often surprises it. It is neither preceded or followed by nausea, nor is it the result of noxious substances or acrid secretions in the stomach or intestines. It closely resembles the vomiting we have in concussion of the brain, and it is simply a reflex act transmitted by an irritation of the spinal cord or a transudation already affecting the brain.

It is contended by some that cholera infantum, in its pathology, resembles thermic fever or sun stroke; and none can doubt the existence of a decided nervous element here. This far, and only this far, however, can I trace the resemblance: In each there is either exaltation or depression of the nerve centers, accompanied by a higher range of temperature than is usual in other diseases, running as high as 105° to 110°. This temperature may exist under the tongue, when the surface appears cold and clammy, and an entire absence of the functional activity of the peripheral nerves. The above symptoms may all be present before the stomach or intestines are involved. If not checked, then cholera infantum, as I understand it, may supervene. We may and most likely will have turgescence of the intestinal follicles, softening of the mucous membrane, with great vascularity and thickening, and the patches of Peyer may become congested or hyperæmic, and all this the result of nervous reflex action—an irritation reflected back

upon a membrane in which at the period of dentition, these mucous follicles are in an unusual state of development.

You will not understand that I claim this to be the course and cause of all cases of cholera infantum; it unquestionably is of many. While the lesion may begin in the bowels, and by this same reflex action be transmitted to the spinal cord and brain, I must insist that in a majority of cases this is not so.

Mr. President: I am well aware that the older and more systematic authors, are against me. Indeed, such great men as Dr. Rush, Dr. Dewees, Dr. Eberlie, Dr. Jas. P. Mann, Dr. Ballard, and last although not least, our own great Horner, a name still honored throughout the known world, may be named as favoring the follicular theory; but I am one of those men, who, knowing they are entitled to their opinions, dare mention them in the face of all the enlightened men in Christendom. The pathology of cholera infantum, according to their views, is that the follicular apparatus is in a state of active development, simultaneously with the appearance of the teeth, and that every part of the digestive system undergoes at this period, a change in its functional action; in connection with this state of the part, the congested state of the liver, produced by the heat of the weather, particularly when aided by an impure state of the air, becomes the principal source of the disease, by preventing the return of the blood from the intestines through its ordinary channel. The mucous follicles, already predisposed to disease by their natural development, above mentioned, are excited to morbid action, by being thus crowded with an undue amount of fluids. Plausible, very beautiful in theory, but unsustained by the facts.

Semeiology. The symptoms of cholera infantum are so apparent to the accurate observer that it is hardly necessary to mention them here. I will, however, call your attention to the fact that the tongue is coated with a white fur, and the pulse is rapid and feels thready to the finger. Some authors speak of the tongue as red at the tip and edges, but this is only seen when there is a tendency of the disease to pass into a typhoid state, or condition. If we can discover its true etiology, and agree upon its pathology, we shall do very well, and its proper treatment will easily follow. An important factor in the treatment of all diseases is to remove the cause; but we cannot remove the cause until we find out what that cause is. One very distinguished author says cholera infantum is caused by malaria, by nothing but malaria, and seems to think he proves his assertion, when he extols the beneficial effects of quinine in this disease. Now I am one of those who think there is a time in the treatment of all diseases when quinine is beneficial, for I regard quinine as a nerve tonic, food, a pabulum for the nerves, a nerve sedative, and in all diseases where the energies of the system are becoming exhausted it proves of inestimable value in restoring the necessary equilibrium to the nervous and sanguiferous systems. It does not do this, however, as an antiperiodic, but as a nerve *supporter*, thereby lessening reflex action in the excito-motory system. Most authors regard "cholera infantum" as a product of heat and impure air, intensified by errors of diet. They divide the causes into predisposing and exciting. Heat and impure air are classed by them as predisposing, and cutting teeth and errors in diet as exciting causes. This theory is more plausible and less hypothetical in conception than the malarial idea. I regard cholera infantum as the product of great and sudden *climatic alterations*, always involving peculiar electrical conditions of the atmosphere. To kill the malarial idea, I have only to state the well-known every day fact that, if the thermometer runs up to 93° in the shade and then suddenly falls to 28° that cholera infantum in teething children, and cholera morbus in grown up folks will occur on the summits of the Blue Ridge mountains, where malaria is unknown; but where electrical phenomena are known. And if these great and sudden atmospheric changes are often repeated you may have a wide spread epidemic of cerebro-spinal meningitis, but it may be dressed in the livery of cholera infantum or cholera morbus. Now I do not like the name, Cerebro-Spinal Meningitis. There seems to be tomtology there, and I think "Spinal Meningitis" or "Brain Fever" sufficiently explicit. I have seen spinal meningitis, the old time brain fever, so often dressed in the livery of cholera infantum and cholera morbus, that I am in the habit of *critically* examining every case of these diseases to see if there is any symptoms of spinal meningitis or brain fever present. In my opinion these sudden and excessive variations of temperature, give rise to the peculir electrical conditions of the atmosphere, and these peculiar electrical conditions, make violent impressions on the par-vagum, or sympathetic nerve, and through its branches violent reflex action is produced. I think long-continued excessive heat capable of producing the same peculiar electrical condition and par consequence, the like results on the pneumogastric nerve and its peripheral branches, giving rise to reflex action.

There ought to be no difficulty in diagnosing a case of so-called cholera infantum from coup de soleil, or thermic fever. In thermic fever the pulse is slow, deliberate in its rhythm beat, slower more deliberate by 15 to 20 in the minute than in health, and patients are better, more comfortable in the night than they are in the day time. But there is another disease, which it is very difficult, I had nearly said impossible, to diagnose from cholera infantum, namely, epidemic spinal meningitis, spinal irritation or brain fever.

In other words I regard the cholera infantum of our climate simply a reflex action usually associated with irritation of the spinal cord and base of the brain, but clothed in the habiliments of cholera infantum or of cholera morbus, a modified form of Asiatic cholera. I have seen as pure cases of Asiatic cholera in the mountainous regions of Virginia, as I ever did at Quarantine off New York City. Why should not the painful process of dentition be as likely to cause irritation of the spinal cord and base of the brain, and its meningeal coverings, as to do so upon the distant mucous follicles of the intestines? As the tooth exerts some pressure upon the peripheral branches of the great sympathetic nerve, I should think more reasonable that it did so. Again, with this view of the question, you can more readily account for the blood-shot eyes, so often seen in severe cases of cholera infantum; more easily also explain the perverted action of remedial agents. I have seen cases where sulphate of morphine appeared to purge, and camphor and opium in free doses scarcely control the bowels. Also, the wonderful toleration of calomel in this weakened state of the bowels, is only reconcil-

able with the theory of brain irritation. Alcohol, the great pacificator of irritation of the brain, here acts as a charm. Then the pulse is peculiarly rapid, but thready, as if it had been a corded pulse that had by excessive reflex action been reduced to a smaller cord—a thread. I will not discuss this interesting subject any further at this time, and will proceed to give you the treatment that I have found in long years of practice, to give the best results.

To meet the first indications in the early stages of the disease I have found the simple, good, old-fashioned iced 'mint julep' the most efficient remedy; and alcoholic liquors, regulated to please the taste and inclinations of the patient, should be continued through all the stages of this disease, assisted by mustard plasters to the nape of the neck, to the epigastrium, and to the ankles or wrists. In severe and extreme cases I use the red-pepper hot-bath. Place 10 or 12 pods of red pepper in 30 gallons boiling water, let stand until it cools down to 110° to 120° Fahrenheit; then souse the little patient into the bath, allowing him to remain from 3 to 5 minutes, then carefully rubbing him dry, apply a flannel roller over his stomach and bowels. Rub his neck from the base of the cerebellum along the spine down to the spinous process of the first dorsal vertebræ with croton oil. If the specific eruption is not produced by two or three rubbings do not hesitate to apply a fly blister. The biliary secretion in these cases being always deficient, and since no reliance can ever be placed in permanent recovery of the patient until the specific biliary discharges (chopped spinach discharges) show themselves, either use small, oft-repeated doses of calomel, prepared chalk and a minute quantity of ipecac with powdered ginger, or, what I have found very serviceable, hydrargyrum cum cretâ, combined with anodynes. Some cases are much benefited by the administration of the bromides of potash, calcium and ammonium. I ignore the regular astringents entirely. To meet the second and third indications, I give the mono-bromide of camphor, every two to four hours, and presses this remedy until he produces sleep and the bowels are quieted. I have found this remedy not only useful in cholera infantum, but prefer it to any of the preparations of opium for young children. I generally mix six grains of mono-bromide of camphor to 120 grains of sugar of milk, and give from one to four grains every four hours to a child twelve months old, a liberal dose of quinine at sundown and early in the morning, the dose according to age. Absolute cleanliness to be required as a *sine qua non*.

If the air is impure where the child is sick it should by all means be removed to a pure, salubrious atmosphere, being careful, however, in carrying it from a warmer to a colder climate. In the commencement of the disease, when apparently a common diarrhœa is the only trouble, I cannot too highly recommend the chlor-anodyne, as prepared by Parke, Davis & Co., of Detroit, Michigan. For the diet I know of nothing better than Mellin's Food for Infants and Invalids.

NOTE.—The author has noticed that births generally take place at the commencement of storms and deaths just before, burials often taking place during severe storms of wind, rain or snow. In other words, we are born on a rising and die on a falling barometer. These events occurring at periods of great barometrical changes. He has also observed the great improvement in typhoid fever patients by the occurrence of a dashing rain with thunder and lightning, and concludes, therefore, that typhoid diseases (asthenic diseases) are caused by minus electricity in the atmosphere, and sthenic diseases owing to an excess of the electrical fluid. He thinks the barometer, when thoroughly understood, will throw much light on the causation of diseases and thereby help to point out to the investigator its rational treatment also.

Fellow's Hypophosphites.

BY A. B. LYONS, M. D., DETROIT, MICH.

I HAVE been frequently asked by physicians what I thought of Fellow's hypophosphites. My reply has always been: "Like other nostrums it is probably a useful medicine, but until its manufacturers see fit to publish its formula, it cannot be prescribed intelligently—and, no doubt, if the formula were published, it would be found to cover no very profound or precious secret. At all events, it would probably cost the patient no more if the medicine were dispensed on the physician's own prescription."

Such a reply, however, based on broad general principles, and applicable to all patent medicines and copyrighted medicinal preparations, does not completely satisfy the physician who has the testimony of individuals, very likely his own patients, to the beneficial effects they have experienced from the remedy, possibly after medicines prescribed by the doctor had been reported as doing no good.

The advertisement of this particular secret remedy meets one at every turn in the medical journals of America, and I never see it without feeling as a member of the medical profession, at once ashamed and indignant. Putting aside the personal sense of humiliation, I could indeed find amusement in the lofty indifference manifested therein alike to scientific precision of statement, and grammatical accuracy of expression.

The peculiar disjointed mode of printing the word "Hypo-Phos-Phites" in the heading of the advertisement prepares one for the painfully amusing incoherencies which follow. We are told, with superfluity of capitals, that the preparation contains "the essential elements to the animal organization, potash and lime." To say nothing of the awkward linking of the words, or of the antiquated chemical views which include potash and lime among the elements, we are at a loss to understand why potash and lime in preference to iron and phosphorus are singled out as essential to the animal "organization."

Iron and manganese are next named as constituents of this remedy and are characterized as "oxydizing agents." It is true that, from the facility with which it receives and parts with oxygen, iron plays an important part in the oxygenation of the blood. That manganese re-inforces the action of iron as a hematic tonic, seems to be established as a fact of clinical observation, but I do not know that we are entitled from this fact to draw the conclusion that manganese is an oxidizing or even an oxygenating agent. However, we all have our favorite hypotheses in regard to the action of medicinal agents, and it is perhaps out of place to criticise too minutely those propounded by others—so long as they are not either antedeluvian or preposterous.

We are told that the preparation contains the "tonics" quinine and strychnine—but no statement is made in regard to the quantities of these tonics.

What physician will take the responsibility of prescribing such a deadly "tonic" as strychnine in an unknown dose?

Finally, our shot-gun has yet another missile making up its charge, viz: "Phosphorus, the vitalizing constituent." Why not devitalizing? Administered to rodents in the form of phosphorus paste, the element has anything but a "vitalizing" effect.

There is a wide-spread belief, whether with or without foundation, that phosphorus, is somehow, intimately connected with manifestations of intelligence. A few years ago Prof. Agassiz threw out the suggestion that a fish diet should be appropriate to brain workers, because fish contains so much phosphorus, and in spite of the circumstance that fish does not contain a very large proportion of phosphorus, the recommendation has become a commonplace of amateur prescribing. But intelligence is not vitality, and medical practice has never attributed to phosphorus any peculiar life-giving power. Still "vitalizing constituent" sounds well—by all means retain that in the advertisement.

The various constituents of this medicine, we are told, are "combined in the form of a syrup, *with slight alkaline reaction.*" (sic.) In spite of the evidence afforded by litmus paper we are willing to concede the alkaline reaction, but, what of it?

The next statement is either meaningless, or else implies what is not true. It reads: "It differs in effect from all others, being pleasant to taste, acceptable to the stomach, and harmless under prolonged use." The first proposition is no doubt true. Differing essentially in composition, if we are to believe the preceding statements, from any other preparation sold under a similar name, it ought to differ widely in its effects, but the difference does not extend to the particulars specified.

Reading further, we learn that "its curative properties are largely attributable to stimulant, tonic, and nutritive qualities, whereby the various organic functions are recruited."

It is difficult to understand how the functions of an organ can be recruited. What is wanted, one would suppose, is not more functions, but more vigor in the exercise of those already assigned to each organ. It is interesting to know that in addition to stimulant, tonic and nutritive qualities, there is a reserve of unnamed medicinal virtues in the remedy which shall "largely" increase the range of its usefulness. We are glad too, to be assured that "in cases where innervating constitutional treatment is applied, and tonic treatment is desirable, this preparation will be found to act with safety and satisfaction," but we were not prepared for the startling announcement that this remedy "enters directly into the circulation with the food products." Such an anomalous behavior of a powerful medicine should score a good point in its favor, unless, indeed, it involves risk of producing its effects too suddenly.

Finally we have a supplementary statement of the therapeutic properties of the preparation to the effect that "it exerts a double tonic effect, and influences a healthy flow of the secretions." Precisely what is the nature of this influence we are not told, but it certainly must not be omitted from consideration in attempting to form a just estimate of the value of the medicine. If only the remedy could exert also an influence over morbid conditions of the secretory apparatus, it would leave nothing to be desired.

Price per bottle of fifteen oz., containing 128 doses, $1.50. To physicians a sample bottle will be sent, express charges prepaid, for fifty cents.

In the old fable the preposterous ears betrayed the ass, who hoped to command respect of man and beast by masquerading in a lion's skin. So in this advertisement, although found in the columns of a reputable medical journal, there lurks under a very thin disguise something that has the unmistakable ear-marks of quackery. There is a largeness and looseness in the phraseology which is very characteristic, and it scarcely needed that last touch to make the revelation complete.

First impressions, however, are not always to be trusted, but circumstances have put it in my way to make a more intimate acquaintance with the preparation, with the result of confirming my dark forebodings. In the Pharmaceutische Rundschau, for Feb. 1884, I met with an analysis made by A. Gawalowski of Fellow's hypophosphites, and originally published in the Rundschau für die Interess. die Phar. 1884.

The composition of the syrup was stated as follows:

Water	38.375
Glucose and Saccharose	56.600
Ferrous hypophosphite	0.846
Sulphates of calcium and iron	traces.
Strychnine and brucine	0.150
Extractive (aqueous) from nux vomica,	4.009

To prepare a similar syrup one should employ, not an alcoholic, but an aqueous extract of nux vomica, like that of the Ph. Germ. 1872. The author believes that the imitations of this syrup that have been heretofore offered, differ from the original mainly in containing the alcoholic rather than the aqueous extract, and proposes the following formula:

Syr. simp.	82.6
Syr. ferri hypophos.	7.5
Ext. nucis vomicæ aq., Ph. Germ.,	9.9

The analysis of Gawalowski does not agree at all with the statements that have been already quoted from Fellow's advertisement. Further, there are inconsistencies in the results reported, if the figures have been correctly transcribed, which forbid us to accept the analysis as final. If it is true that the preparation contains in each dose ⅛ gr. of strychnine and brucine combined, we cannot wonder that it is an active medicinal agent. Nux vomica contains these two alkaloids generally in nearly equal proportions; at all events one third of the alkaloid may be assumed to be strychnine, making each dose of one teaspoonful equal about to about one-twelfth grain of strychnine. The extract nux vomica employed must have been of very poor quality, for it must have contained less than four per cent. of alkaloids. The crude drug generally contains nearly three per cent. Further, in the proposed formula, the amount of extract nux vomica is doubled, so that one teaspoonful of the preparation will contain about 7½ grains. This would seem to be an excessive dose, equivalent, at the lowest estimate, to about one-third of a grain of strychnine.

My curiosity was excited to ascertain the actual facts in the case, and I accordingly made, myself, a somewhat careful examination of Fellow's "hypophos-phites."

I found that the contents of a bottle of the syrup measured 424 c.c. (14⅓ fluid ounces). As this is said to be sufficient for 128 doses, I conclude that the dose of this medicine is 53½ minims or one small teaspoonful. The syrup had a density of 1.305 at 15° C., (59° Fah.), was of a neutral reaction, certainly not alkaline—somewhat viscid, of a pale yellowish color, but containing a bulky dingy greenish precipitate; somewhat fluorescent in a strong light; distinctly but not disagreeably bitter, with a peculiar clinging property when taken into the mouth.

Qualitative tests showed that the preparation consists "largely" of a glucose syrup. On igniting a portion of it, there remained an ash amounting to somewhat less than one per cent of the syrup, showing that its total inorganic constituents do not exceed 4.5 grains to the fluid ounce.

The syrup contains .0615 per cent. of alkaloids, consisting of a mixture of quinine and strychnine. Brucine is absent, showing that in this particular sample of the "hypo-phos-phites" extract of nux vomica had not been used. I did not attempt a complete separation of the alkaloids, but convinced myself that at least two-thirds of the entire amount was quinine. The ash contains lime, potash, iron and manganese; the total amount was so small that I was content to rest satisfied with a qualitative examination merely.

These bases were present chiefly in the form of hypophosphites, with traces of sulphates. By converting the phosphorus into phosphoric acid, precipitating with magnesia mixture, in presence of tartaric acid, and titrating the precipitate, dissolved in acetic acid, with uranic acetate, I determined the phosphorus, which, in the form of hyphoposphorous acid was sufficient in amount nearly to neutralize all the bases present.

From these data it is easy to construct a formula which shall practically reproduce Fellow's hypophos-phites. The preparation must be made from a syrup containing a large proportion of glucose—not because glucose is cheap, but in order that the preparation may "enter directly into the circulation with the food products." If made with a cane-sugar syrup this will have to undergo a process of digestion previous to the absorption of the saccharine constituent, which, by the way, ought to have been enumerated among the nutritive constituents of the syrup. A preparation substantially identical with that of Fellow's will contain as its medicinal ingredients, besides glucose in each fluidounce:

Calcium hypophosphite	.....	1¼ grain.
Potassium "	.....	1½ "
Iron "	.....	1½ "
Manganese "	.....	1 "
Quinine "	.....	7-16 "
Strychnine "	.....	1-16 "

The addition of a few drops of acid to the preparation, will make a clear syrup, instead of a turbid unsightly mixture like the original, but the product will be more decidedly bitter, and it may be as well, perhaps, to omit the acid.

If a malt extract rich in diastase were employed in place of the glucose syrup, no doubt a preparation of much superior efficacy would result, and it seems as though an increase in the proportion of the hypophosphites would increase its activity.

It is easy to figure out the cost of a syrup made in accordance with the above outlined formula, and the result of this little mathematical calculation would furnish food for reflection.

There is nothing in the mixture, and there does not claim to be anything, which physicians do not prescribe every day. The physician raises a question of ethics at once, if his neighbor practitioner claims to possess a secret of great value, charging proportionately for his services, when in fact there are no secrets of any value in the practice of medicine. If compelled to divulge his secrets, the quack invariably proves to be a pretender, and what is true in medical practice is true in pharmacy. Charlatanry in the compounding of medicines is not more honorable than in the prescribing of them. If physicians can only keep distinctly before them this axiomatic principle, they will save themselves from endless annoyance at the hands of vendors of medicinal compounds, "protected" by illegitimate trade-marks, — the modern, high-toned substitute for the old-fashioned, vulgar patent medicines. No reputable physician, to-day, will write a prescription for Jayne's expectorant, or Warner's safe kidney and liver cure. But in principle it is not a whit better to order Horsford's acid phosphates, or Battle's bromidia. In place of the former, he may write liq. acidi phosphorici, and thus throw the weigh of his influence in favor of legitimate pharmacy. For the latter let him prescribe such a combination of sedative agents as he believes will suit the case in hand—unless, indeed, he have so litle confidence in his own skill that he prefers to throw on some other unknown person the responsibility which should be his own.

In the present instance, I would propose that in place of the nostrum "Fellow's hypo-phos-phites," the physician prescribe syrup hypophosphites comp. with quin. strych., and manganese, meaning by this a syrup containing the medicinal constituents named above. To prepare such a syrup, the following working formula may be employed:

Glucose	1 lb.
Simple syrup	1 pt.
Hypophosphite calcium	128 grs.
Hypophosphite potassium	48 grs.
Sulphate iron	48 grs.
Sulphate manganese	32 grs.
Sulphate quinine	14 grs.
Sulphate strychnine	2 grs.
Water, q. s.	

Dissolve the calcium and potassium hypophosphites in two fluid ounces of warm water. Add to one ounce of water three fluid drachms of the syrup and dissolve in the mixture by the aid of heat, the remainder of the salts. Mix the solutions and set by a few hours, covered, to deposit the sulphate of calcium which is found. Filter into a bottle containing the remainder of the syrup, wash the residue with an ounce of boiling water, mix filtrate and washings with the syrup; dissolve the glucose in the mixture, and add through the filter enough water to make two pints. The formula would be improved by substituting for the glucose a refined extract of malt like that prepared by Gehe, in Germany.

The proportion of the medicinal ingredients in the syrup, it is true, is small; I shall not warrant it to perform miracles of cure. It is simply offered as a substitute for Fellows' hypo-phos-phites; whatever therapeutic efficiency that nostrum has, we may count upon obtaining equally from this syrup.

Hæmorrhoids — Their Treatment by Cascara Sagrada.

By F. C. Herr, M. D., Philadelphia, Pa.

EVERY physician is aware of the intractable nature of many cases of hæmorrhoids, and it is not infrequently that his best directed efforts fail completely to afford that relief which is so much coveted by the sufferer. Except in those cases where surgical interference is demanded, it must not be assumed, despite the intensity of the symptoms, that a curative influence may not be effected by a judicious employment of drugs. While few cases which are non-surgical will remain unyielding to proper treatment, there are some, and no doubt they have been met by almost every physician of moderate practice. I allude to those cases which complicate cirrhotic disease of the liver, and where the portal and hemorrhoidal obstruction becomes almost immovable, by reason of the mechanical interference with the blood current; much relief may be afforded in these cases, but therapeutics has not yet attained that perfection which enables us to cure them absolutely. There is yet another class of cases to which special attention may be called. They occur in the progress of the history of a case of chronic gastritis. The *modus operandi* of their production here is highly interesting. In chronic gastritis there is such a complete and wholesale perversion of the intestinal secretions (sometimes almost a suppression of them) that the bowel is deprived of its required stimulus, and consequently remains inactive. Its fecal contents are passed only after very great voluntary straining at stool, and this evacuation comes perhaps only once in several days. The primary link in the chain of causation here is the perverted intestinal secretion, and this demands early attention if we desire to relieve the patient from the distressing condition of hæmorrhoids. Let me say, *en passant*, that the materia medica affords no remedy that is comparable in efficiency to cascara sagrada for the restoration of abnormal intestinal secretion. In chronic gastritis it is invaluable as it meets almost every indication without any deleterious influence that can be measured. Recently a well-known physician in this city was hastily summoned to attend an acquaintance of the writer. His diagnosis was dyspepsia. We all know what that diagnosis means, or may mean, to the afflicted one—cardiac palpitation, dyspnœa, asthmatic paroxysms, etc., etc. In this particular case many of the worst phenomena were present. The attending physician, true to the traditions of the schools, interdicted all food, and ordered the following combinations of drugs to be taken, *i. e.*:

℞ Pulv. opii, gr. iv.
Argent. nitrat, gr. iv.

M. Div. in pil. No. xx. This is prescription number one. It really made the patient worse. A substitution followed. It was prescription No. 2, as follows:

℞ Pulv. opii, gr. iv.
Mass. hydrarg., gr. xxxij.

M. Div. in pil. No. viij. Still the patient did not mend. This want of improvement was the signal for another change. It was made, and prescription No. 3, as follows, was given:

℞ Potass. bromid.
Potass. bicarb.
Tr. calumbæ.
Infus. gent. comp.
M. f

I do not remember the quantity of each ingredient here, but the combination is correct. Still another prescription was given which the patient could not take. All of these medicines were given in one week's time for dyspepsia. They did not cure the case, nor relieve the symptoms. The attending physician was discharged, and the writer was called in to see the patient. The diagnosis was confirmed, and with a proper regimen was conjoined the use of cascara cordial with most happy effects. That patient is not well, but under the changed treatment a very marked improvement has taken place. The intestinal functions have been greatly restored, while the entire digestive apparatus seems to have been much strengthened and invigorated. In a former publication the writer sought to direct especial attention to the value of cascara cordial in the management of dyspeptic disorders, and the case above narrated offers a fresh proof of this value. With this digression we will return to the subject proper of this paper. The several classes of hæmorrhoids to which we have referred, namely, those which can be removed only by surgical procedure, those which complicate cirrhosis of the liver, and those which occur in the history of chronic gastritis, constitute by far the smaller number of cases which come under the observation of the physician. Perhaps few persons pass through life without at some time or another becoming the subjects of hæmorrhoids, and it is to this larger class that we desire particularly to direct attention. It is to that variety (we allude to the etiological, not the pathological nature of the variety) of hæmorrhoids which readily yields to treatment that we wish to consider in relation to curative plans of therapeutic management. Whatever determines blood to the rectum tends to their production. It is manifest, therefore, that the employment of active cathartic medicines, all of which determine the blood to the rectum, may produce hæmorrhoids, and it is equally clear that such medicines are contraindicated in the hæmorrhoidal condition. A long line of drugs has been in vogue for their treatment, some useful, many more useless. The writer has had more decided benefit from the employment of the compound licorice powder of the Prussian Pharmacopœia than from any other single agent save one. The *sine qua non* of a cure is the solubility of the bowels. Without this not much can be confidently hoped for. With this, little is left to be done to facilitate a happy result. We said that any agent which directs the blood to the rectum is likely to aggravate, and even produce the hæmorrhoidal condition. An exception to this exists in the case of alœs. Despite the fact that it does produce congestion of the pelvic viscera, it is yet curative in piles. Barker's formulæ for its administration is as follows:

℞ Pulv. aloes soc.,
Saponis cast., āā ʒi,
Ext. hyoscyam. ʒ ss,
Pulv. ipecac gr v.
M. div. in pil. No. XV.

The sulphides have been highly lauded in the treatment of piles. Stillingia has won deserved rank as an efficient agent in the cure of that variety of pile which is sequential to constipation. The "grape cure" has been successful in some cases. Iodoform, in suppository, has produced happy results. Ergot, in conjunction with nux vomica, will often

effect a cure, but these remedies, require, generally, generally, the assistance of laxative agents because, irrespective of free intestinal evacuation, an almost insuperable barrier stands in the way of permanent relief. During the past three months the writer has had a sufficient experience with the use of a new remedy in the management of hæmorrhoids to convince him that it possesses superior efficacy as a reliable curative agent in this distressing affection. It is not impossible that it may not afford relief in all varieties of the disorder; it is positively curative, however, in those forms which are dependent upon a constipated habit, and highly serviceably, as before indicated, in that variety which complicates chronic gastritis. Cascara sagrada, the remedy here referred to, has acknowledged merit in the treatment of chronic constipation. It is incomparably superior to any other agent known to the writer for the relief of this condition. It is, therefore, indicated in the treatment of hæmorrhoids as the solubility of the bowel becomes a matter of paramount importance. Nor is this all, usually in these conditions a complex state of affairs exists—the hemorrhoids being, perhaps, one of the many expressions of this state. As constipation, habitual constipation we mean, is generally the result of perverted intestinal secretion, and disordered digestive function; and as hæmorrhoids are generally the result of habitual constipation, it follows that a remedy which will correct the former conditions may cure the latter. Ample experience has shown that cascara sagrada is highly beneficial in intestinal sluggishness, and in the preparation known as cascara cordial its efficiency is heightened by a happy combination. This latter preparation, given, not in ten-minim doses, but in teaspoonful doses twice or thrice daily, will be found to exercise a speedy and happy action upon the hæmorrhoidal condition. The writer a few years ago prescribed rhamnus frangula with indifferent results in the same conditions mentioned here. It produced a sense of great uneasiness, and often griping. The rhamnus Purshiana is incomparably better, and in the preparation above noted it meets a demand which has for a long time existed in the medical profession, a demand for a remedy which would cure hæmorrhoids without subjecting the patient to any unpleasantness or inconvenience. To add to the list of remedies already in vogue one other for the treatment of piles would be something in a therapeutic sense, but to add one to the list which surpasses (as we are sure it will be found to do from extensive experience) all others in efficiency, is at least just cause for congratulation to the army of sufferers from hæmorrhoids.

Vesicaria Gracilis.

By W. S. Newlon, M. D., Oswego, Kansas.

I HAVE been making some experiments with the vesicaria gracilis, indigenous here on our argillaceous soils, and flowering early in May. The common name of the herb is bladder pod. It is a crucifer. I find it a stimulating diuretic of very considerable power, increasing the diurnal secretion of urine several ounces. It abounds in nitrogen, and I think its virtues may be extracted with alcohol or vinegar, better than with water, particularly hot water.

The herb grows west of the Mississippi river, and is not mentioned in Gray's Manual or Wood's Class-Book, nor has it ever been used as a medicine by the doctors, to my knowledge.

I hope some one, before long, may prepare the bladder pod and place it where the profession may have any opportunity to try its efficacy, as a diuretic. Its effects as a rubefacient are also powerful, but for that purpose I have not yet tested it very much. The vesicaria I name "gracilis" because our State Botanist, Prof. Carruth, gives it that specific name.

Euphorbia Pilulifera.

By Wm. A Caveness, M. D., Lone Star, Texas.

IN August last I received a small quantity of fluid ext. pilulifera, and used it myself for asthma. Kept notes on a sheet of the "Clinical Record" reprint, form 1921½. Deeming it unnecessary to give all details, will only say here that I first used it on Aug. 30th, at 9:30 p. m. Relieved. Aug. 31st, 6 a. m., and 9:30 p. m.; Sept. 1st, 9:30 p. m.; Sept. 2nd, 6 a. m. Each time the remedy gave relief, but the asthmatic attacks were light. On Sept. 8th, 6 a. m., again tried the euphorbia pilulifera; asthmatic attack more severe. Soreness in breast, and other symptoms denoting considerable bronchial trouble. A second and third dose were taken, but no relief. After using grindelia robusta and inhalations, became relieved. On Sept. 20th, at 6:30 a. m., began with pilulifera, and took several doses without any beneficial effect. Again was relieved by the grindelia and inhalations. The best results were obtained by using it in form of warm infusion. Judging from this short experience I am inclined to place it, as a remedy for asthma, inferior to grindelia robusta. Would be glad to know of the results of pilulifera in the hands of other medical men.

Translations.

[All articles signed "T" are translated for The Therapeutic Gazette by C. W. Tangeman, M. D., Cincinnati.]

Paraldehyd in the Treatment of Delirium Tremens.

Sleep plays quite an important role in the life of the individual, whether healthy or sick, but in no condition is it more important than in delirium tremens. This condition of the patient is such that he is generally in a weak condition, his digestive system is disturbed from the use of impure spirits, that he partakes of as a habit. It is an accepted fact that sleep in a case of this kind will produce better effect than any medicine given for the relief of the symptoms. The patient should sleep and in many instances the success of treatment will depend on the rapidity with which the patient is put to rest. If now the question is asked, what means have we at our command to produce this effect, the answer is chloral and opium,—not much choice. Nor could the result be very brilliant since in so many instances these very drugs were contratndicated, leaving us without a remedy. When the more daring employed these drugs they frequently met with bad results.

The introduction of paraldehyd as a hypnotic was watched by myself with a great deal of interest.

Though my number of cases is not large I will give science the benefit of my results with this new drug in delirium tremens:

1. August P., æt. 42; common laborer. Applied for treatment June 5. His house-keeper said that P. was suffering from attacks of dizziness since a few months, continuing for some time, he being unconscious for the time. He has been a hard drinker and during the prior to his admission consumed large quantities of liquor. Sleeplessness, loss of appetite, vomiting, disturbing dreams, soon set in; during the past 3 days had become more irrational, sees all kinds of animals, cannot recognize persons, groping around on the floor in search for money, hands tremble, temperature slightly elevated, pulse full and slightly increased. Three grammes (gtt. xlv) paraldehyd and later 2 grammes more are ordered to be given; 20 minutes after the last dose patient begins to sleep, and sleeps 10 hours without interruption. June 6. Tremor is scarcely noticeable, and the mind is in better condition. Three grammes paraldehyd, repeated, following which he slept quite well. The same treatment was repeated on the following day. Slept well at night and some during the day. P. continued to improve and was discharged as cured June 13.

Case 4.—Anton Sch., æt. 34; iron molder. Applied January 24, 1884, for treatment. He has followed his laborious pursuit since he was 15 years old; was quite industrious. He had become addicted to the use of liquor quite early, and continued to imbibe more freely until he consumed large quantities. Complained of chilliness, loss of appetite, tinnitus aurium and dizziness, with loss of sleep. January 22 he became delirious and by the 24th he could not be retained at home any longer. When he was admitted to the clinic he presented a perfect picture of delirium tremens. He sees fish, mice, rats and birds, is very restless, tries to catch these animals; he is quite irrational; tremor is well marked; tongue is coated; no fever.

Treatment.—January 25th. Ten grammes (ʒ ijss) paraldehyd in four divided doses. Commenced sleeping toward morning; pulse beats 120. Following day more rational; pulse 96; he takes some nourishment.

26th. Six grammes (ʒ jss) paraldehyd. Passes a good night; pulse 78; mind is clear.

28th. Patient receives another 4 (ʒ j) gramme-dose of the drug and is discharged on the 30th.

G. has treated only four cases, but with such exceptionally good results that he does not hesitate to recommend the use of this agent in delirium tremens for the following reasons:

1. On account of its safety when given in large or rapidly repeated doses.

2. Sleep caused by paraldehyd is prolonged and intense, therein filling the demands in these cases fully. Since it is perfectly harmless it may be administered freely and frequently. It can be employed especially in cases where opium and chloral are both contraindicated, as in atheromatous degeneration of the arteries, fatty degeneration of the heart, apoplexy and venous hyperæmia, etc. It is indicated when the patient is in a very weak condition; then it may be combined with stimulants. Should further observation with this remedy show that it is not tolerated in certain cases, so much is positive: it may be employed with impunity in cases where other hypnotics are contraindicated, and, lastly, we have added another weapon to the small list for the relief of delirium tremens. This subject is one worthy of further consideration by the profession in general.—*Zeitschrift für Therapie.* T.

Bromine, Its Use as a Disinfectant, and its Production in America.

Bromine was discovered in 1826, by Antoine Jerome Balard, the assistant to Anglada, at the time professor of Materia Medica and Therapeutics at Montpellier. In 1825 B. found a modified reaction of iodine, on starch, which consisted in adding a solution of starch and diluted sulphuric acid to the substance to be tested, when a watery solution of chlorine was carefully added. At the point of contact a distinct blue zone was formed. By this test he discovered iodine in bodies formerly not known to contain it—for example, in sea molusks, etc., found especially in the salt swamps fed by the waters of the Mediterranean, near Montpellier. By the application of this test to the mother-liquor at the salt-works, near Montpellier, he obtained not only a blue, but also a yellow discoloration, accompanied by a peculiar penetrating odor. Repeated experiments convinced him that the reaction was caused by a separate and distinct body, similar, in some respects, to chlorine and iodine. July 3, 1826, he submitted a full report to Academy of Sciences, of Paris.

Anglada suggested that the substance be called "murid," but on the advice of Gay Lussac it was changed to bromine (to stink). In B.'s report on bromine, he describes its combination with chlorine, iodine, phosphorus, sulphur, kalium, baryta, lead, silver, gold, etc. Gay Lussac, in his report to the Academy, closes with the following words: "The discovery of bromine is an important discovery in chemistry, and gives to Ballard an honorable position in the history of science."

Shortly after Liebig heard of the great discovery, he analyzed the water of a number of the German salt springs, and succeeded in verifying the statements of B., in every respect. Serullas, in 1827, analyzed the new element more carefully, and obtained cyanid and hydrobromic ether.

Lowig, in 1829, published a monograph on the chemical relations of bromine. Liebig claims to have recognized this element prior to Ballard, but mistook it for chloride of iodine. He says there is nothing mortifying to a chemist than to be unable to free himself of prejudices and influences contrary to experiments. A number of chemists without the knowledge of B.'s work were going through the same experiments, had obtained the same result, but did not know what it was, until they received B.'s publications.

Bromine is one of the most powerful disinfectants, and possesses the advantages over chlorine that it can be stored away, can be transported, and can be applied in a concentrated form. The fact that it is so concentrated prevented it from coming into general use. It was dangerous. The discovery of Frank removes this objection entirely. Solid blocks of gravel or infusoria clay are allowed to take up 5 to 6 times their own weight of bromine by absorption, which is afterwards again given off as a gas. After being exhausted they can be saturated again. Frank devised an apparatus by means of which the vaporization of bromine can be regulated. The action of

bromine on organic bodies can be regulated or suspended by means of petroleum. The annual production of bromine in the United States, according to Gordon, amounts to 450,000 to 500,000 pounds:

Pennsylvania	70,000 pounds.
West Virginia	110,000 pounds.
Ohio	130,000 pounds.
Kanawa River, West Virginia	45,000 pounds.
Canal Dover	30,000 pounds.
Midland and St. Louis, Mich	100,000 pounds.

The above-mentioned places are the only ones in North America where the production of bromine is remunerative. Two tons of salt contains about one pound of bromine.

Since 1866 a great deal of attention has been paid to this branch of industry. In 1868 the price per pound was $2.00, while a present competition has depressed the price to 28 cents per pound. Since 1870 large quantities have been exported to Europe. Quite a little difficulty has been experienced in finding vessels to carry the bromine, so that recently it is exported in the form of bromide of potassium.—*Zeitschrift Œsterr. Apotheker. Verein.* T.

Erythema Universalis Produced by the Application of Sublimate Gauze as a Dressing.

Since the use of a solution of corrosive sublimate as a dressing is quite frequent at present, a report of a case by Reichel will not fail to be of interest. M. K., æt. 20, baker by trade, was admitted to the clinic at Breslau, for the correction of a genu valgum on the left side. Patient otherwise healthy, presented a good family history as well as a good physical appearance. Ogston's subcutaneous osteotomy was the operation performed. September 5, after the operation, the leg and foot were placed in straight position and covered with a sublimate gauze bandage extending well up on the thigh; the whole was then strapped to a long wooden splint, thereby making the limb absolutely straight. During the first few days no untoward symptoms set in; in short, the subjective as well as the objective condition of the patient was good. On the fifth day he complained of a slight pain and itching in the extremity operated on which increased gradually until it could no longer be endured. September 14, the bandage was removed. The day previous a burning sensation was complained of on the chest and abdomen, caused by localized spots of erythema. The temperature which had been normal, rose to 38.1° (100.5° F.) in the morning, 38.3° (101.° F.) in the evening.

After the bandage had been removed an intense papulo-vesicular eczema developed over the bandaged region. The skin was intensely red, the subcutaneous tissue became œdematous. The symptoms which caused special interest was an erythema extending over the entire body, but most marked over the chest, abdomen, scrotum, inner surface of of the thighs and elbows. The general condition of the patient was not disturbed. No pains in the head, appetite was not affected, nor were there any symptoms of salivation present. All the symptoms began disappearing on the following day, and by the 29th of September the patient was cured. The disease of the skin in the above case undoubtedly was produced by the mercury. Since some authors describe an eczema mercurialis, brought about by the long continued use of small doses of mercury, the peculiarity in the above instance is the rapidity with which it developed, and its extension over the whole body.

The use of sublimate gauze seems to cause a disposition to eczema, more so than carbolized dressing, which is objectionable to the otherwise valuable dressing. In cases where it causes eczema the wounds do not heal by first intention. I briefly report this case in order to call the attention of the profession to this method of dressing, and its objection. Possibly a dressing may be eventually be discovered so modified that sublimate can be applied without producing any irritation.—From *Berliner Klinische Wochenschrift.* T.

Agaricin and its Anthidrotic Action..

Quite recently agaricin, the active principles of agaricus albus, which has for some time fallen into disuse, has been re-introduced in England as a remedy with active properties in acute hectic night-sweats.

In Germany, Seifert, of Würzburg, is the only one who made observations with this remedy and published them. S. employed agaricin in the treatment of 12 phthisical patients, and reports excellent results. In Centralblatt für Klinische Medicin, Pröbsting reports on a number of cases treated with this same drug. It was first employed in 1882, in pill form, in combination with Dover's powder. Dover's powder was given in combination to counteract possible unpleasant secondary effects of agaricin. It was administered according to the following formulæ:

℞ Agaricin 0.50 (gr. vijss.)
Pulv. Doveri 7.50 (℥ j ¼.)
Rad. alth. mucilaginis.
M. ft. pill, No. 100.

The largest number of patients at the clinic suffering from profuse night-sweats were treated with the above pills. The result can be summed up as follows: In most of the cases after the administration of a single pill, 0.005 (gr. $\frac{1}{12}$) agaricin, the sweat had disappeared entirely or was very much diminished, while a second pill in the last named cases had the effect to permanently relieve the sweating. A few patients were not benefited very much even by 0.01 (gr. ⅙) doses; in three cases of profuse hectic sweating, given in very large doses, it had no effect at all. Atropine had been given with the desired effect. By comparison it was determined that 0.01 (gr. ⅙) of agaracin was about as efficient as .0005 (gr. $\frac{1}{120}$) of atropine. Seifert claims that the action of agaracine is very slow, therefore recommends that it should be administered at least five or six hours prior to the time that sweating sets in. P. on the contrary, not unfrequently observed a very rapid effect. As for example, in a case where the patient was found in a profuse perspiration at the morning visit. One half hour after the administration of two pills the attack rapidly disappeared. In a case of acute endocarditis, where the chest was covered with large drops of perspiration, after the administration of two pills the secretion promptly ceased. After the full effect of agaricin had been obtained its action continued for some time. Its effect on the digestive system was not objectionable; only in two cases the drug was not well tolerated. Young thinks that it produces sound healthy sleep in phthisical patients and moderates the cough, but this we cannot

determine positively. It may act largely by causing a cessation of the sweating, and from the effects of the opium. We can sum up the action of agaricin about as follows:

When given in doses ranging from 0.005 (gr. $\frac{1}{13}$) to 0.01 (gr. ⅙) even profuse sweating ceases, in phthisis as well as in other diseases.

It often acts very promptly.

Its action not unfrequently continues for a few days.

It seldom causes a disturbance of the digestive or nervous system, even when continued for some days.

Agaricin is a good substitute for atropine.

It is just as active as atropine and when continued for some time is not so injurious. T.

Osmic Acid in the Treatment of Peripheral Neuralgias.

Since the publication of the observations of Delbastaille a year ago, from the Winiwarter clinic, of the use of osmic acid injected into tumors (especially sarcoma and scrophulous lympoma), German surgeons have verified his observations. The results of these experiments have not been quite so brilliant as they were supposed to be, but notwithstanding this, one thing is definitely settled: The operation is quite harmless, and no one need hesitate to apply it. Recently Neuber has extended its range of application by injecting a 1-per cent. solution into the parenchyma of obstinate cases of neuralgia.

Three patients treated by this method, two with ischial and one with trigeminous neuralgia, were discharged as cured after making from 10 to 24 injections. Comparing these results with those of the older remedies administered in this form of trouble, there is quite a difference in favor of the drug. The number of cases treated in the above manner are so few that it may be wise to wait and observe, since all the remedies for the cure of neuralgia recommended, until now, have failed. Eulenburg, of Berlin, has made parenchymatous injections in a number of cases, one for the relief of a strumous growth in a man 44 years old, without producing any local trouble or unpleasant secondary after-effects. The tumor was located so as to make pressure on the air passages, producing dyspnœa and catarrhal asthmatic symptoms. Operative interference was declined by the surgeons, when injections of sclerotic acid and alcohol were made, but had to be discontinued on account of pain, without any relief. Injections of osmic acid were now commenced, 16 injections being made in one month, with the effect of causing little or no pain, and diminution of the growth to such an extent that all symptoms of dyspnœa and asthma disappeared. Twelve cases of neuralgia treated by E. yielded very satisfactory results. The duration of treatment varied in cases according to the acuteness of the disease, ranging from one to six weeks. The number of injections were three to fourteen. The following is the prescription used for the solution:

℞ Acidi osmici crystal. 0.1 (gr. jss.)
Solve in aqua destill. 10.0 (3 ijss.)

The solution is best made just prior to using, since it decomposes very readily; the dose being 0.5 (gr vijss) of the above solution. It is quite astonishing that this acid which produces quite a smarting sensation when applied to the mucous membrane, causes no unpleasant effects whatever, when injected into the parenchyma of growths, or subcutaneously; there is no reaction, but a slight redness, at the site of puncture, which passes away in a day or two. If the seat of the disease permits, the injections are best made just over the diseased nerve trunk; osmic acid has a great power of diffusion, therefore when injected in the neighborhood of the affected nerve, it may act by coming in direct contact.—*Berliner Klinische Wochenschrift.* T.

Subcutaneous Injection of Ergotin.

The subcutaneous administration of ergotin has until now not been very satisfactory; the results experimentally, to both patient and physician, have left much to be wished for. Not unfrequently an injection causes local irritation and inflammation, (pustules, indurations and abscesses). The attention was now directed to the discovery of new preparations, but without success. Sclerotinic acid and scleromucin are not adapted to this use. Eulenburg finally offers a preparation extracted from secale, called *ergotininum*, which has been placed in the market as suitable for hypodermic use, under the name of ergotininum citricum. E. has employed it in forty-seven cases of different diseases and tested its value. His observations while not yet extensive, nevertheless prompt him to publish the following conclusions:

1. Gehe's preparation is suitable for hypodermic use since it does not cause any local irritation or pain, if the injection is carefully made.

2. In adults 0.0002—0.0007 or even as much as 0.001 may be given with safety, causing sometimes a slight increase in the frequency of the pulse-beat; and a slight depression of the temperature which passes off rapidly; these are the only physiological symptoms that are noticeable.

3. In certain forms of vaso-motor neurosis, cephallalgias, neuralgias, morbus Basedowii, etc., the injections are often of marked benefit. In paralysis of the sphincters, enuresis incontinnence of urine due to spinal irritation, temporary relief is well marked by the infections subcutaneously.—*Zeitschrift für Therapie.* T.

Paraldehyd as an Antidote to Strychnine.

Prof. Cervello has discovered a new property of paraldehyd, namely, that it is antagonistic to the action of strychnine. The many superior qualities of this drug will have a tendency to make it more preferable in many instances to hydrate of chloral. Animals that have received a lethal dose of strychnine can be kept alive by the administration of paraldehyd, and more than that symptoms of strychnine poisoning can be prevented entirely.

Paraldehyd narcosis, in animals poisoned with strychnine, is normal. The respiratory act is lessened gradually, reflex movements become weaker, and the temperature sinks. It counteracts acute strychinine poisoning in doses which do not cause deep narcosis. When large doses of the poison have been given the prostration continues much longer than after the use of paraldehyd. Narcosis does not appear so readily if the animal is under the influence of strychnine. Paraldehyd prevents the increased blood pressure caused by strychnine. In frogs the soothing effect of paraldehyd passes off since it is more rapidly eliminated than strychnia.

If animals are poisoned by paraldehyd the effect cannot be antagonized by the administration of strychnine.—*From Deut. Med. Zeitung.* T.

Treatment of Infantile Eclampsia.

The following valuable formulas for the relief of infantile eclampsia during the spasm, are published by Wertheimber, of München (in Jahrbuch. für Kinder-krankhejten.) By preference he employs injections per rectum of hydrate of chloral (0.25 [gr. jv] to aqua dest 50.0 [ʒ jss]), since it is more efficient than the inhalations of chloroform. The bromides are quite satisfactory in neuropathic children :

℞ Kali bromat. 2.00 (ʒ ss.)
Aquæ dest. 80.0 (ʒ ijss.)
Syr. simp 10. (ʒ ijss.)

M. D. S. One teaspoonful three to four times daily.

℞ Kali bromat. 2.0 (ʒ ss.)
Ammon. bromat. 1.0 (gr. xv.)
Aquæ dest. 100.0 (ʒ iij.)
Syr. simp. 20.0 (ʒ v.)

M. D. S. As above.

The combination of the two remedies is very effective.

℞ Kali bromat. 1.5 (gr. xxijss.)
Chloral. hydratis 0.5—8 (gr. vijss–xij.)
Aq dest. 100.0 (ʒ iij.)
Mucil. gum arab. 5.0 (ʒ j¼.)
Syr. cort. aurant. 1.50 (ʒ ss.)

M. D. S. Two teaspoonfuls every three to four hours.

In eclampsia due to inanition and collapse, warm baths and excitants, as liq. ammon. anise, ether, etc. T.

Paraldehyd as an Antagonist to Strychnia.

Cervello has recently discovered a new property of paraldehyd, the remedy which will soon displace hydrate of chloral. Animals to whom lethal doses of strychnia have been given can be resuscitated, and all the symptoms of the strychnia intoxication be made to disappear by the use of a large dose of paraldehyd. Narcosis produced in animals runs a normal course.

Respiration diminishes gradually, reflex action is weakened, and the temperature falls. Paraldehyd counteracts strychnia narcosis in doses too small to produce narcosis. When large doses of strychnia have been administered to the animal the paraldehyd narcosis is much more persistent than where the last named drug acts alone. Narcosis is very much retarded when doses of strychnia and paraldehyd are given simultaneously. Paraldehyd prevents the increase of blood pressure of strychnia. An animal poisoned with paraldehyd cannot be restored to life by the administration of strychnia, so the antagonistic action is only one-sided.—*Zeitschrift F. Allgemeinen Œsterr. Apotheker Verein.* T.

Correspondence.

Philadelphia Letter — The Study of Snake-Poison.

In my last letter I spoke of the high compliment paid the University of Pennsylvania by the recognition of the work of two of its prominent scientists, Drs. S. Weir Mitchell, and E. T. Reichert, by the British government, and promised to speak further on the subject in my next communication. You will also remember that I have taken up this subject to give the readers of the GAZETTE some idea of the kind of work that is being done on drugs in this city, for the purpose of illustrating what is meant by the word Pharmacology. I described Pharmacology as the study of drugs from all possible points of view, and spoke more particularly of that branch known as the physiology of drugs, and though the venom of serpents has, as yet, had but very little use as a therapeutic agent, discoveries may be made by the work that is being done on it by Drs. Mitchell and Reichert, which will indicate some use for it in the treatment of the sick. It is, however, because similar work to this is being done in greater or less degree, on the various drugs of the materia medica, and that on this work is being founded the science of physiolical therapeutics, that the following description of the researches on snake-poisons become interesting to the students of therapy.

About two years Dr. S. Weir Mitchell published a most elaborate monograph on the subject of venoms, his work being, in fact, about the first of merit, that has appeared on this important subject. The study was not finished, however, and as physiology has opened a much larger field of research since the first publication, Dr. Mitchell determined to pursue his investigations in venom still further. The work was accordingly commenced anew last October, this time with the aid of fresh talent, and with bright prospects. Dr. Mitchell has now associated with him the well-known scientist, Dr. R. T. Reichert, Demonstrator of Experimental Therapeutics at the University of Pennsylvania, and the combined researches of these gentlemen have already developed many new and interesting facts with regard to snake poison. These investigations were undertaken, originally, for the purpose of ascertaining, if possible, some antidote for snake bite, the hope being that an agent might be eventually discovered, the use of which would destroy the poison, either by decomposing it chemically, or in some other way. They have succeeded in demonstrating the fact that, either hydrobromic acid, caustic soda or potassa, if put with the venom, will completely destroy its physiological properties. If injected a few minutes after the poisoning has occurred, and before it is absorbed, it will antidote the poison. But absorption is so rapid that this discovery is, unfortunately, of but little practical value. Tr. ferri chlor. possesses a similar power of destroying the poison; but best of all, is the permanganate of potassium, which is effective in a much smaller dose than the other agents named. Indeed, it has been stated that from five to seven minutes may elapse after the bite has occurred, and yet life may be saved by the injection of a few grains of the salt in solution, at the site of the wound.

But the most interesting part of the story remains to be told. These investigators concluded it probable that such venom is a compound of several poisonous principles, and, acting on that assumption, they have developed some very interesting facts. The discoveries of Prince Jerome Bonaparte and others led to these conclusions, for they had already found that the water procured from the precipitates, caused by boiling venom in water, still preserved poisonous properties, and had named it ecchinodine, or viperine. A similar poisonous principle has been separated from rattlesnake poison by Dr. Mitchell, which he named

crotaline. But further investigations on the part of Drs. Mitchell and Reichert, have enabled them to demonstrate the presence of four different poisonous principles in the venom of rattlesnakes, three of which evidently belong to the globulin family, while the other appears to be a peptone. These principles, though resembling each other in many respects, both chemically and physiologically, are not only readily distinguished apart by means of certain tests, but differ in their physiological action as well. The latter has been determined by experiments on animals—frogs, pigeons, dogs, and rabbits,—a very costly work. In fact, I am told the work will cost about fifteen hundred dollars, not including expense of publication.

With regard to the preparation of the principles referred to, a few words may be of interest. No. 1 is precipitated from fresh venom by adding a large excess of water. No. 2 is prepared by precipitating with sulphate of copper, taking care to avoid excess as re-solution takes place thereupon. No. 3 is obtained by dialysis, the principle precipitating in the dialyser. No. 4, the peptone principle, precipitates by boiling venom, and is separated by filtration.

The snakes are shipped to the university in double boxes, with a few perforations for the admission of air, and are kept in boxes in the laboratory about three feet square by four feet in height. A free circulation of air is maintained by means of holes around the bottom of the box, which are covered with strong wire gauze to keep the inmates from escaping, and by a wire gauze cover provided with a lid. The snakes do not appear to be happy even with these commodious quarters, and will not eat what is provided for them. The question of feeding them thus became an important problem. At first they were fed with soups and milk by forcing these liquids down their throats by means of a catheter. They rebelled against this food, however, and a diet of fresh raw meat was substituted with success. A funnel-shaped tube is put down their throats, and the snakes are stuffed with raw meat, on which diet they thrive, get fat, and secrete a large amount of venom. Venomous snakes will not feed well in captivity, rejecting even live food, of which they are particularly fond, but will starve themselves for about six months, becoming very thin, and then die. Harmless snakes, on the other hand, will eat with avidity when caged.

Contrary to popular opinion rattlesnakes are fond of fresh water, and are never so happy as when wallowing in it. Fresh water is given them every day. They will drink it to repletion, bathe in it, and sometimes soak themselves in the pail for forty-eight hours, lying motionless with only their heads exposed above water.

When it is desired to extract the poison for experimental purposes the snakes are caught by means of a lasso consisting of a stick about six feet long, by an inch an a half thick, over the end of which projects a leather strap made into the form of a noose. Through this noose the head is projected by dropping it over the neck. The snake is then pulled up to the top of the box, a saucer placed under the fangs, and the poison glands milked of the contents with the finger and thumb on each side of the jaw. The snake is then dropped back into the box. The quantity of venom obtained in this way varies from a very small amount up to a teaspoonful, depending upon the size of the snake and how recently it has been milked. Sometimes absolutely nothing can be extracted from the gland. Difficulty is sometimes experienced on account of the constrictor muscle which surrounds the mouth of the gland and is under the control of the will of the snake.

Two of the largest rattlesnakes ever known to have been captured have fallen martyrs to science in this laboratory, one of them measuring seven feet six inches in length and weighing fifteen pounds, the other measuring eight feet and turning the beam at twenty pounds. The latter has been stuffed and placed in the National Museum at the Smithsonian Institute at Washington, and the former now decorates the office of Dr. Oliver Wendell Holmes. Another snake died the other day. It measures over seven feet and is large in proportion, and it was my good fortune to secure its skin, which now embellishes my office.

Central American Correspondence—Argemone Mexicana.

It is a pleasure to one engaged in writing up the topography of places to be able to vary the old standard description, and instead of saying, "a miserable place," to write " a really handsome spot." We are now in one of the finest places on the Pacific Coast between San Diego to Panama. Corinto, or as it is some times called Realejo, is situated on the Bay of Realejo, a small inlet off the Pacific Coast, 716 miles north of Panama and about 2,700 south of San Francisco. It is approached by a narrow channel, the vessel's yard-arms almost touching the shrubbery on Cardon Island at the entrance thereof. Once over the bar the roadstead is tortuous and narrow, yet of sufficient depth to float the largest ships. On the north west end of Cardon Island is a very fine lighthouse, kept in order and repair by the government of Nicaragua, and the light of which is attended to by two natives at the liberal (?) salary of thirty dollars a month. The shores of the bay and approach to the town are of white sand, which is, and has been, the resting-places of millions of shell fish of innumerable variety and shape. Turning abruptly to the left from the outer bay after sailing about a mile, a smaller bay is entered and the town of Corinto is seen. The town extends about six hundred yards back from the beach and is about a mile and a half in length. The houses are not very prepossessing, but are neater and cleaner in appearance, and in every way, than is usual in Central American and Mexican towns. The landing is not easy, the traveler having to be landed on a sandy shore in surf or flat-bottomed boats. Once on *terra firma* the streets are discovered to be unpaved and simply sand, through which the night soil, slops and rain, etc., find an easy sewerage, and filter to mingle with the waters of the bay. The people are lighter in color than those further north and have a more intelligent countenance. The dress of both sexes is cleaner, and were it not that immorality even to lewdness existed amongst them, they would vie with those of our own cities in education and other accomplishments. In consequence of the high charges (monetary) made by the priestcraft throughout this part of Central America, marriages are very rare and the result is that although living together as man and wife the most of the couples here are mated though not not churched. This no one seems to notice. What

can come therefrom but one effect, viz., syphilis and its concomitant evils? The women do not have marriage vows to respect, and so keep the old adage in full view, that "when the cat's away the mice do play." The town is the principal port of entry for Nicaragua on the Pacific coast, and there are always eight to ten vessels of different nationalities at anchor. As I write I can count eleven, not including ourselves. They come here laden with liquors and various articles of merchandise, but liquors principally, and carry away crude sugar, mahogany, dyestuffs, sugar and cotton. The city of Leon is only 50 miles from here and the intervening country is very fertile. The soil is a loamy sand and full of small creeks and streams. The water used for drinking purposes is procured from shallow wells and from cisterns, and is of very poor quality. During the year the thermometer ranges from 68° Fahr. to 90° Fahr., and while the days are hot the nights are cool, and often chilly.

The natives here make use of a variety of plants and shrubs for medicines, amongst them the Turnera aphrod., Lippia Mexicana, and Cassia Fistula. They also use for sudorific purposes a plant which Linnæus calls the Argemone Mexicana, though why the "Mexicana" is added I am at a loss to determine, as it is indigenous to this country as well as to Mexico. It is of the order Papareaceæ, and is a plant of from two to three feet in height; its leaves are alternate, sessile, sinuate, lobed, with white spots and prickly teeth or spurs. It bears when in bloom 6-petaled yellow flowers about 1 3-4 inches in diameter, and has many stamens. The prickly ovate capsule is crowned with the nearly sessile radiate stigmas, is nearly an inch in diameter and filled with numerous fine-pitted blackish brown seeds. The plant has an acrid bitter taste and exudes a yellowish milky juice when wounded. The plant resembles gamboge in its acrimony. Here and in Mexico it is in great repute as a solvent for warts and corns and the fresh juice is applied as a stimulant to indolent ulcers, as also in various forms of ophthalmia. An oil derived from the seeds is used for a purgative, in dose of 30 drops (2 cc). The plant has a local reputation as an anodyne, or soothing purgative. The natives seem to place great faith in the plant and to use it at every opportunity.

The medical profession is represented in Corinto by two graduates of Guadelajara, and there is a fine hospital here. There is no record kept of cases, etc. and it was, therefore, impossible to get any statistics.

REGNAR.

CORINTO, Nicaragua.

Is Pharmacy a Profession?

I was much interested in an article in the March number of the GAZETTE from the pen of Lawrence Wolff, M. D., entitled "Pharmacy as a Profession," and I feel tempted to add my little mite to the much agitated and important question.

While writing from this far western coast allow me to say that I give my experience and opinion as an eastern pharmacist, more familiar with eastern physicians and their methods of prescribing than with those of this coast.

Dr. W. in his article says "that pharmacy can never become a profession as long as pharmacists are agents for and manufacturers of proprietary and secret medicines, dealers in cigars and fancy goods, and clandestine rum-sellers." Is this so? Is it true that pharmacists are manufacturers of proprietary articles to any great extent?

Let us hear from them in this respect. Yet we are agents for them. Why? One reason is because the celebrated Doctor So-and-so or the renowned Doctor Blank prescribes some of them, as the following copies of *bona fide* prescriptions will show:

℞ Misturæ morrhuæ (Scott & Bowne's) bot. No. j.

S. Use as directed.

— ———, M. D.

And this:

℞ Bromidia, ʒij.

S. One-half to one teaspoonful three times a day.

— ———, M. D.

And more often this:

℞ Fellow's syr. hypophos. comp., ʒiv.

S. A dessertspoonful after each meal.

— ———, M. D.

And I have even had prescriptions calling for St. Jacob's Oil and Tropic Fruit Laxative!

Now what is the essential difference between these and the countless array of 'patents' that adorn (?) the shelves of pharmacists and even grocers? If we are obliged by physicians to keep one why should we not keep others?

Clandestine rum-sellers, I am glad to say, are rapidly disappearing from our ranks, especially where we have good pharmacy laws. In this respect I have noticed a great difference between the states of Illinois and Iowa with their laws on the one hand, and Michigan, Minnesota and Dakota without any, on the other. I made a careful study of this during an extended trip through the above-mentioned states, and very rarely did I find a registered pharmacist or a graduate of a pharmacy college selling liquor except in a legitimate and honorable way.

To sum up briefly, I will state what I think to be a few necessary steps up which we must climb to become a liberal profession, or, in other words, pharmacologists:

1st. We must have educated pharmacologists.

2d. We must have physicians educated to that point where they will no longer prescribe proprietary articles, but such drugs as are known to be beneficial and can be procured of any good dealer or manufacturer.

3d. Let us organize into societies and associations, which in time will bring us good state and finally good national pharmacy laws.

When this is done you will find shysters routed from our ranks and scientific pharmacologists compounding prescriptions, using the metric system, and ready for any true advance in our profession tending to accuracy and thoroughness. And possibly you will see our offices stripped of patent medicines, cigars, etc., etc. Our new scientist will then no longer be a tradesman, but a pharmacologist, who makes his living (as all men must do) by preparing prescriptions and receiving, not his price for a commodity, but his fee.

WILL C. BAILEY, Ph. C.

COLTON, California.

Compound Syrup of the Hypophosphites.

A combination of strychnia with the hypophosphites in suitable proportions, and of uniform qual-

ity and strength, for physician's convenience in prescribing, or dispensing, is greatly to be desired at this time.

Experience has convinced me that far better results are obtained in a large proportion of cases attended with wasting and debility, from such combination, than from either remedy given singly. Even in phthisis, and other suppurating diseases, its tonic and restorative effects are more prompt and decided than from any other remedy or combination known to me; and no less so in many forms of dyspepsia, with nervous irritability, and melancholia; and in the wasting and sleeplessness of nursing women. In that ever-increasing class of over-taxed females, engaged in teaching, or other confining, monotonous work, who are not sick but complaining, and yet are unable to quit their vocation, strychnia with the hypophosphites, becomes a most efficient help, giving tone to the nervous system, and improving digestion.

The dose of strychnia in all these cases should not be more than 1-64 of a grain, three times daily, and even that quantity, with the hypophosphites, will sometimes make its action distinctly manifest in the muscular nerves, and instead of having to increase the dose, or number of doses, daily, it will be found that an increased susceptibility to its action exists, after its protracted use.

That the combination of strychnia with hypophosphites does exist in the secret formula of a very popular "Comp. Syr. of hypophosphites," is very well known to most physicians, and is prescribed by many, for convenience sake, but such combination is not to be found, so far as I know, among the many very excellent formulas, adopted and published by our large manufacturing pharmaceutists. Whenever this is done, and a syrup is prepared by them, uniting the actively tonic properties of strychnia, with the hypophosphites, in a suitable form for physician's use, it will, I think, largely supercede the ordinary syrups now in use, by fulfilling in the same case, a greater number of urgent indications.

I did not intend at this time, to do more than to call your attention to the matter, hoping the suggestion might receive that consideration you are so well prepared to give it.

R. B. JESSUP, M. D.

VINCENNES, IND.

Carbolic Acid Injections of Piles.

In the March No. of the GAZETTE appears a letter of enquiry from Dr. Grirard of Winchester, Tenn., about the strength of carbolic acid injections in hæmorhoids. I have been using the hypodermic treatment for piles for the past four or five years and with universal success. The second case I had was a physician from Middlesex county, Virginia. He came to Brooklyn to consult some eminent physician in New York, for piles and prolapsus of the rectum. I remarked to him when he made known his business, that he need not go any further than my house—I could relieve him without the knife, ligature, ointments or caustic, and the operation would not interfere with his outdoor movements, as it produced only temporary pain. I attack only one pile daily, and where there are five or six piles, it sometimes happens they are relieved by injecting every alternate one; but it is safest to attend to each one in turn, and thus effect the entire removal of all. In this doctor's case he had had a bad prolapsus of the rectum, and had used sundry instruments and appliances to remedy his trouble, but none of them afforded him any relief. The rectum was promptly relieved at the last operation, and he returned home at the expiration of a week a sound man, so far as his piles and prolapsus of the rectum was concerned. He reported to me about twelve months afterwards, as still relieved, and no return whatever of hæmorrhoids or prolapsus. Let me say that in very large tumors, it may be necessary to inject them two or three times before the circulation is cut off, as was the case recently with a friend of mine in Virginia. I vary my prescription a little, according to the case for treatment.:

℞ Carbolic acid crystals, ʒ ii
Pure glycerine, ʒ ss
Fluid ext. ergot, (fresh) ʒ iii.

M. and use in syringe from 5 to 6 minims at each injection. I sometimes add a fractional part of a grain of tannin if there is not a prompt coagulum in the pile.

WM. T. FLEET, M. D.,

BROOKLYN, N. Y., 128 2nd Place.

Doses of Medicines.

Probably the proper dose of medicine depends somewhat on latitude and longtitude. My observation and experience go to indicate the success of small doses in New England and larger ones in the West, and still larger ones in the South. I have seen many exceptions, but have found the rule as stated.

In New England, I have seen repeated trials of our common medicines, in large and small doses, and the small doses have been the most successful.

In 1857, I was persuaded to give homœopathic medicines a careful trial, and the result was entire failure.

When veratrum viride and gelsemium came into use I tried them in different doses, and I succeeded best with the small doses. No medicines in my hands have ever done better than veratrum and gelsemium in one drop doses.

During the war I had abundant opportunity to test the dose of quinine in intermittent fevers. I never failed to cure promptly with small doses. Generally, I gave quinine in half-grain doses, and it was rather unusual to have another chill after taking four doses. Probably I saw six or eight patients who had more than one chill after taking the customary four half-grain doses of quinine.

At this time, while small doses of quinine were curing malarious fevers from all parts of the South, I witnessed repeated failures of quinine in larger doses to cure similar cases. The routine rule in hospital and private practice was to give from three to five grains of quinine four times in an ordinary every-other-day shake.

When podophyllin and iridin were introduced as bilious medicines instead of mercurials it was found that one-drop doses of the tincture would prevent or remove bilious troubles, as certainly as larger doses, and without griping and nausea.

It is only by exact and repeated trials of medicines in different doses that the rule as to the best dose can be established. My own observation and practice convince me that in most diseases (not in all) small doses are better than large ones.

C. H. SANBORN, M. D.,

HAMPTON FALLS, N. H.

Agaricine in Night Sweats.

In the August, 1883, number of the THERAPEUTIC GAZETTE, p. 385, in an article entitled "Agaric in the Night Sweats of Phthisis."

In this article the active principle, agaricin, is particularly recommended—to be used "hypodermatically." (I believe that is the latest for subcutaneously).

Having an aggravated case of night-sweating on my hands, I have procured some of Merck's agaricin, but am uncertain how to administer it. I find that it is but slightly soluble in cold water, and thickens up like starch on boiling; not at all soluble in alcohol, unless the alcohol be heated, and then readily soluble, but precipitates on cooling. Glycerine seems to hold it in suspension rather than to dissolve it.

Can you give me any information concerning the drug or tell me where I can find any?

CHAS. G. BROOKS, M. D.

EAST BOSTON, MASS.

[We are unable to trace the source of the note referred to, and do not know whether any method was suggested for bringing the agaricine into solution for a "hypodermatic" injection. From the account given of the properties of this substance, which has the characters of an acid, we should think that it could be best dissolved as a sodium salt, and would suggest trying sodium bicarbonate, in aqueous solution, as a solvent. The acid may be so feeble as to require that caustic soda be employed. In that case great care would have to be taken to avoid excess of the soda. These are suggestions only, based on the descriptions given in the books, of the principle in question. We can give no information from actual knowledge or experiment. Our correspondent will find a couple of notes bearing on the use of agaricine, in this issue of the GAZETTE. ED. THER. GAZ.]

Fellow's Hypophosphites.

I have been thinking for some time of calling attention to Fellow's Compound Syrup of Hypophosphites, and if it be not asking too much, to request you to publish an analysis of the same.

Other compounds that are put in the market in a similar way than is, have been analysed, and as this is one that has an extensive sale, both to consumers direct as well as through the profession, I have wondered why it has thus far escaped such notice.

In this region it has considerable patronage, and many physicians are convinced that it is not without merits, though probably no well-informed physician believes it contains the amount of hypophosphites that is claimed for it.

For my own part, I am a believer in the beneficial action of small doses of active medicines, especially when used as tonics and restoratives, and I am inclined to believe that aside from the "booming" this medicine has received, by "drummers," and advertising, that its success lies in the amount of strychnia which it contains, probably supplemented somewhat by small amounts of quinine and iron which are also incorporated in it.

Now, as this is one of the "protected" medicines, and is sold at a most exorbitant price, it would be doing a great good to the trade and to the profession, to properly inform us about it.

In fact, it would be interesting to understand just exactly why it is that we have so many "protected" medicines, and it seems to me that men engaged in honorable and (morally) legitimate pharmacy, could serve "their day and generation" in no better way, than coming to the front with plain, undeniable facts, concerning them.

M. R. MORDEN, M. D.,

ADRIAN, MICHIGAN.

Meat Poisoning.

April 11th was called to see Mr. A., one of the leading lawyers of our town, just at midnight. Found him, his mother-in-law, and sister-in-law complaining of the stomach, and vomiting almost incessantly. Asked what they had eaten for supper. Mr. A. replied that he brought home a ham that evening, of which they had all eaten. As their stomachs had been thoroughly emptied of their contents, I prescribed to secure rest and allay excitement, and left, promising to return next morning.

April 12th, 9 o'clock A. M. Mr. A. had continued to vomit until 5 o'clock this morning; the other two patients had rested pretty well, but all showed symptoms of gastric irritation. The cook, a stout young colored woman, who immediately after supper, had gone to her home, about 150 yards distance, tells me that her stomach began to pain her before she got home, that she began to vomit soon after, and continued to vomit at intervals all night. Two children, the only remaining members of the family, ate no meat for supper, and were not sick. The two white ladies mentioned above, ate but little, and vomited less than the other. All were confined to bed some four or five days, with almost continued fever, furred tongues, with red tip, and very irritable, weak stomachs. I attribute the whole trouble to the ham. Am I right?

My observation extends to several other similar cases of poisoning to the above, and due to the same cause. In two instances whole neighborhoods were affected. Those that ate of the ham detected nothing wrong in it, and the ham above referred to, was, to all appearance, taste and smell, as fine as any I ever saw. While numerous families all over town used of hams from this same lot, this one family only was thus affected. This fact leads me to ask, Was it the ham? If so, what was the matter with it? The views of any who have had similar cases would be very acceptable, either through the columns of the GAZETTE, or by private letter.

R. L. HINTON, M. D

PRESCOTT, ARK.

Alopecia Areata.

A case recently came under my observation, which to me is of unusual occurrence. The patient, a youg lady of 24 or 25 years of age, has always had good health and is of robust and healthy appearance. Her hair has turned perfectly white in spots varying in size from a three-cent piece to that of a quarter. Her scalp seems to be healthy, and her hair, naturally of brown color, is long, and apparently healthy, the only exception being the spots of white hair before alluded so. If any of your many readers know of similar cases or of successful treatment, I would be obliged to hear from them.

M. D.

The Therapeutic Gazette

WILLIAM BRODIE, M. D., Editor.

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Eucalyptus Globulus and its Uses.

ALTHOUGH this more recent addition to the materia medica is quite familiar, by name at least, to the medical profession, and was, indeed, admitted to the U. S. Pharmacopœia at its last decennial revision, there is reason to believe that it is not as extensively employed in medicine as its merits demand. It is with a view to attract to it the attention of our readers that we have undertaken to give a description of it, and to indicate its therapeutic application.

The eucalyptus globulus or blue gum tree (nat. ord. myrtaceæ), is indigenous to Australia, where it attains a size which places it among the giants of the floral kingdom. Its average height, when full-grown, is 250 feet, but occasionally reaches an altitude of 350 feet, and specimens have been found which measured over 400 feet. The leaves are the part used in medicine. They are "petiolate lanceolately scythe-shaped, from six to twelve inches (15 to 30 centimetres) long, rounded below, tapering above, entire, leathery, gray-green, glandular, feather-veined between the midrib and marginal veins; odor strongly camphoraceous; taste pungently aromatic, somewhat bitter and astringent." U. S. P.

We have gone to some considerable trouble in looking through the periodical literature for reference to Eucalyptus since it first attracted the attention of the medical profession of this country, and reproduce herewith, in a somewhat disjointed shape, a number of excerpts which we have made. They will serve to indicate the properties and the therapeutic applications of the drug, and furnish a basis for deductions:

In the Gardener's Chronicle in 1871, the Reverend M. J. Berkeley announces on the authority of a letter received from Dr. Gimbert, of Cannes, a new method of treating wounds by using eucalyptus leaves in the place of lint. The balsamic nature of these leaves not only cures, but after a few hours removes all the unpleasant odor of the discharge.

Dr. David Wooster calls attention, in the Pacific Med. and Surg. Journal, of May, 1872. to the effects of the fluid extract of eucalyptus globulus, after an experience of eight months in its use in the Marine Hospital. He regards it as a diuretic of rare virtue, capable of being administered when other diuretics in common use are inadmissible. It is an aromatic tonic, and has notable restorative effects in low states of the system, as typhoid fever, typhoid diarrhœa, and dysentery. In vesical catarrh its action is very beneficial. It relieves headache apparently as the saline cathartics do, by its diuretic action. It not not impair, but rather improves the appetite. As an external application in chronic ulcers it has great value.

The Pharmaceutical Journal, of October, 1872, devotes a lengthy article to the consideration of the genus eucalyptus, its acclimatization and its uses. We learn from this that although the tree was known in Europe, and was occasionally cultivated in gardens, ti was not until 1854 that measures were instituted looking to its acclimatization in that country. M. Ramel, having visited Melbourne in that year, became interested in the tree through the labors of Baron von Mueller, the indefatigable director of the botanical gardens in that city. He sent some seeds to Paris, from which point they were distributed not only throughout southern Europe, but to many localities in Asia, Africa and America. Like all the myrtaceæ the eucalyptus is an evergreen, but it presents the peculiarity of changing its aspect at three or four years of age. The leaves are the part which contains the medicinal principle, which is an essential oil existing in numerous pellucid glands throughout the leaf. The growth of the eucalyptus is prodigiously rapid, even when transplanted far from its normal habitat, and nearly all the species attain gigantic proportions. A tree ten years old ordinarily presents the development of a well-grown oak of a century, and it is not rare to meet in Australia with specimens in their fiftieth year one hundred and fifty to nearly two hundred feet high, and fifty to sixty feet in circumference at their base. But notwithstanding this remarkable growth the wood has great solidity and has been employed on the Australian coast for constructing quays, jetties, etc. It has the property of resisting admirably the action of water. There are a great variety of species (60) of the eucalyptus, the principal among which are eucalyptus globulus, the eucalyptus amygdalina, eucalyptus rostrata and eucalyptus odorata. The eucalyptus yields as many gum resins as there are species, but they are all very similar in their physical characteristics.

Large quantities of oil of eucalyptus are exported from Melbourne to England. This product is distilled from the leaves of various species, those of the eucalyptus amygdalina yielding the largest percentage. Gimbert found this oil to have a soothing effect, having experimented with it on himself. It diminishes vascular tension and induces sleep. It is anti-spasmodic and possibly anti-asthmatic. Applied externally it is stimulating, making an excellent rubefacient liniment. The production of this oil has developed into the extensive industry which it has,

through the intelligent fostering care of Baron von Mueller.

Dr. Sidney Ringer contributes an article to the London Medical Record, in 1873, covering very fully his knowledge of the therapeutic properties and chemical constituents of the eucalyptus globulus up to that date. He quotes Cloez, who states that eucalyptus globulus consists of chlorophyl, cellulose, essential oil (eucalyptol) resin, tannin, lime and alkaline salts. Eucalyptol is a liquid camphor ($C_{24}H_{20}O_2$) and possesses almost all the active properties of the plant, which does not contain an alkaloid. A moderate dose of eucalyptol, 10 to 20 drops, at first accelerates the pulse, produces pleasant general excitement, shown by an irresistible desire for moving about and a feeling of buoyancy, increased appetite, strength and sexual appetite. Goebel says this excitement may amount to fever, and Gimbert believes that he has produced fever in a dog by subcutaneous injection. In excessive doses eucalyptus is poisonous, killing by destroying the excito-motor functions of the cord. It reduces markedly the temperature. In proper doses it stimulates the sympathetic and promotes capillary circulation, and is thus indicated in congestions and paralysis of the capillaries. Piles sometimes disappear under its administration, perhaps from the local effects, but most likely from its effects upon the pelvic sympathetic. It greatly increases the elimination of urea. Gimbert, who usually passed 20 grammes in the 24 hours, voided 40 grammes in the same time under the influence of eucalyptus. Gimbert concluded that it is an antiseptic by preventing decomposition of organic substances, and particularly of blood. It is a powerful general stimulant through its primary action on the nervous centers and sympathetic, thereby quickening the capillary circulation. Through its influence on the nervous system it is a spasmodic. By diminishing excito-motor activity of the cord, by lessening animal combustion, the frequency of the respiration and the circulation, it becomes a febrifuge and sedative.

The oil of eucalyptus was made the subject of an investigation under the direction of Prof. Binz, of Bonn, with a view to determining whether it possessed the same antiseptic action which quinine had been proved by Binz to possess. These investigations showed that eucalyptol is quite as powerful in this respect as quinine, it preventing decomposition in albuminous solutions in blood, retarding the growth of fungi in tartaric acid or tannin. It hinders alcoholic fermentation much more than quinine does. Eucalyptol depresses the temperature of the healthy body even more than quinine, reducing the temperature in fever as well as in health.

The eucalyptus is a fine, hard wood, makes excellent sleepers for railways, and is useful in places where a solid wood that will stand dampness is required.

With regard to the essential oil no definite conclusion has yet been arrived at. It appears probable that it is essentially a mixture of cymol ($C_{10}H_{14}$) a terebinthine ($C_{10}H_{16}$) and an oxygenated oil ($C_{10}H_{40}O$;) that is to say, these constituents were recognized in commercial eucalyptus oil, which was probably distilled from eucalyptus amygdalina.

Von Mueller enumerates about 60 species of eucalyptus. Labillardiere called attention to the extraordinary hardness of the wood.

When freshly cut the wood is soft, but so full is it of resinous gums that it soon hardens and becomes well nigh imperishable. It is proof against that fearful scourge, the termites or white ant, and in India it is used for the sleepers of railroads, where it defies the insects and the climate. Though excellent timber, some of the species are of little worth for fuel. Indeed, the wood burns with such difficulty, that it is especially adapted for shingles.

The leaves of the eucalyptus amygdalina contain six times as much volatile oil as those of the eucalyptus globulus.

The Bacillus Theory of Disease.

THE hypothesis of a bacillus as the etiological factor in disease in its manifold varieties—a distinct bacillus for each separate disease—has a very considerable basis on demonstrable facts, is very fascinating, and facilitates very much a study into the "why" of diseased conditions. The ultimate affords such a haven of repose and rest for the weary explorer, that it is not singular that the bacillus theory has seduced to its support such a large following. A desire to know the cause of things has always possessed the mind of man, and its intensity has increased with the intelligence of the individual. "Whence" and "whither" are conundrums with which those existing between these terminal borders have ever struggled, and the desire to solve them seems to be inherent in humanity. The desire is not confined to its bearings on the individual; it is projected into the things which environ him. How natural, therefore, that a theory which affects to furnish the ultimate cause of disease should have the large and increasing following which it has.

If such a thing were possible, the "materializing" of etiology which is implied in the bacillus theory, would be a consummation devoutly to be wished. Our pathogenists, however, lured by the revelations of their microscopes to the haven which the bacillus has seemed to afford, have in their repose evidently laid the flattering unction to their souls that beyond the confines of this haven there is naught else. They have assumed perfection in their lenses, and that there is nothing in nature which a perfect lens may not discover. Such assumptions are manifestly unwarranted. "Small fleas have smaller fleas to bite 'em, and so on *ad infinitum*." While our better microscopes reveal "fleas," or bacilli, which are invisible under less powerful glasses, and may possibly have reached the bounds of possibility in such revelation, who shall say that they are not the carriers of still smaller "fleas," which are in turn the bearers of others so attenuated as to transcend the limits of the material and invade the spiritual? When Drs. Wood and Formad discovered in the diphtheritic membrane collected at Ludington, Michigan, a bacillus of such shape as had never before been seen, it was supposed that the causative factor of this deadly disease had been isolated, and that all that remained was to discover an agent which would destroy this parasite. Dr. Formad, however, was not content with this discovery, and washing these bacilli in pure water he found that they were completely innocuous. He had washed off a something (which something was either the cause or the effect of diphtheria) which his microscope had failed to discover. Koch, the indefatigable searcher into

those mysteries which have eluded the unaided human eye, has discovered a bacillus which is seen nowhere else than in the tuberculous lung, and another which is found only in the intestines of the cholera patient. Who can say that these bacilli are the causes and not the effects of the consumption and cholera? Following these discoveries by Koch we have new methods of treatment suggested for these diseases, based on the exclusion of the bacilli and on their destruction when, haply, they have escaped our watchful guardianship of the portals at which they have entered. But while all good people may devoutly pray that such treatment may be successful, more evidence than has yet been adduced will be necessary to convince the majority that these microscopic parasites are the essential causes, which being destroyed, will banish these diseases from our nosology. It is but just to Koch, to mention that he is not responsible for the conclusions and assertions which have been founded on his discovery. They are chargeable rather to the Imperial Board of Health which is made up of his enthusiastic admirers. He has the conservatism of the true scientist, well knowing that until his discoveries have been established beyond a peradventure any theories based thereon are in danger of being annihilated. Back of all that is material there is a region which the eye of man, naked or aided by the most powerful lenses, has not yet been able to pierce. Man ranges the fields of physiology, but ever and anon he comes to a sudden stop at the impenetrable veil which separates these fields from those of psychology on the other side—the region in which the ψυχη which pervades all living matter, the bacillus not excluded, has its origin.

Dr. Formad, who has given evidence of his qualifications to speak on this subject, says (Philadelphia Medical Times):

1. The bacillus of Koch is a valuable diagnostic sign of tubercular disease.

2. Nothing is proved by its discovery for the etiology of tuberculosis.

3. The too ready acceptance of the bacillus doctrine is not justifiable, and is likely to do more harm than good.

4. Neither phthisis nor any form of tuberculosis is contagious.

Fellows' Hypo-phos-phites and Other Preparations of that Kidney.

WE have given in another department of this issue, and in response to numerous inquiries of the nature of those published, some facts bearing on the proprietary compound extensively advertised under the name of Fellows' Hypo-phos-phites. Our readers will draw from these their own conclusions. This nostrum differs in no essential particular, as regards its ethical relations, from the multitude of trade-marked preparations, which, in spite of their pseudo-scientific nature and absurd claims, have been made sources of profitable pecuniary return to their manufacturers, directly and indirectly through the patronage of medical practitioners. We have, in season, and sometimes, perhaps, out of season, advised the medical profession of the gross injustice it does, not only the public, but also itself, in becoming the pliant instrument in the hands of astute non-professional vendors, for introducing their wares into public confidence. The evidence that this injustice is beginning to be recognized, is accumulating. Thinking men in the profession are becoming aroused to the necessity of withdrawing their countenance from the specious frauds which they have been induced to patronize, and we have earnests that ere many years have passed, an appreciation of the proper relations which the practitioners of medicine bear to their co-workers in a different part of the same field, viz., the pharmacists, will prevail among the great body of reputable physicians. The dawn of that hoped-for era in the history of medicine in this country, will be hastened by an appreciation of the fact that illegitimate pharmacy possesses no open sesame into the secrets of nature, that it may recover from her store-houses aught which is denied the conscientious scientist, who is prompted to research through desire to enrich his humane profession, rather than to amass wealth through imposition on suffering humanity.

We frequently hear it urged in extenuation of the patent and the copyrighted name, as applied to medicinal compounds, that "when a man invents a good thing he should be allowed to reap the benefits thereof; refuse to protect the inventor and you paralyze progress." We are not disposed to dispute the correctness of this position, and, loyal as we are to the Code of Ethics of our profession, we should have much sympathy with the inventor of a valuable medicinal compound, or the discoverer of a drug hitherto unknown for therapeutic value, should he seek some means whereby he might reap returns for his investment of scientific knowledge, or the time, labor and capital expended in the invention or discovery. But what medicinal compound is there now on the market, whose "invention" or "discovery" has involved the devotion of any scientific knowledge, or the utilization of any facts which are not the common property of the profession? Nay, more, what nostrum is there, the formula for which has not been deliberately filched from the medical profession? The prescription files in drug stores are the source whence we have the vast majority of our cure-alls. What knowledge is there, for instance, required in the preparation of Bromidia, or Iodia, or Scott's Emulsion, or Pancreo-pepsin, or Papine, or Acid Phosphates, *et id genus omne*, that the manufacturers of these preparations should have such right thereto, as enables them to demand of the public, exorbitant prices for them?

Our colleague has done the profession good service, through his analysis of Fellows' Hypophosphites, published in his article in our present issue, and in his presentation of a formula for a preparation of the same nature, but more in conformity to the rules of scientific pharmacy and rational therapeutics. Such a preparation can be made by the competent retail pharmacist, or the manufacturing chemist, who, after allowing for a legitimate margin of profit, can sell it at a price much reduced from that asked for the proprietary compound. We would suggest the name "Hæmatic Hypophosphites" for such a preparation. It is at once euphonious and convenient, and suggestive of the ingredients entering into it. It behooves physicians to prescribe such substitutions as this for the nostrums, for the introduction of which to the public they are sought to be made the cat's-paws. Let them

eschew every protected or proprietary preparation for which their patronage is solicited, and it will not be long before the semblance of the distinction between the patent medicines, whose virtues are blazoned forth in the posters, on fences and deadwalls, and the semi-respectable, pseudo-scientific, trade-marked nostrums which are advertised in medical journals, will be effaced. When that time comes pharmacists and physicians will work together with greater harmony, and to greater mutual profit.

Anti-Vivisectionists and Anti-Vaccinationists.

WE are in frequent receipt, and at a regularity of intervals which bespeaks method, of pamphlets arguing against vivisection and vaccination. We have not, heretofore, done more than read this literature as carefully as its volume, and our limited time for such reading, would permit. Lest, however, our silence under these repeated volleys of argument should be construed as evidence that a breach were being made in our defenses of the practices assailed, we now embrace the opportunity to state that the missiles have impinged on the thick bosses of our armour and have fallen harmless at our feet. While admiring the zeal of the respective secretaries of the societies from which this literature emanates, we cannot but deplore the fact that it is displayed in directions success in which would mean a reversion of the processes at work to eliminate disease and diminish the sum total of human suffering.

Referring to the efforts of the anti-vivisectionists, we hold that man is the chief animal in the scale of being, and that the greatest good to which all others can be put is to minister to his rational pleasure, and benefit. We know of no other mission for the inferior animals, unless it be a mission to roam at will, to live without moral restraint, to die and rot. Man's better nature revolts at cruelty, to either man or beast, but to call it cruel to subject a beast to the necessary pain of experiments calculated to add to that knowledge which is essentially philanthropic in its purposes, is pure sentimentalism. Doubtless, vivisection is liable to abuse, when practiced by natures of an inferior grade of refinement, but the chances are that in a profession the experiences of which are ennobling and elevating in their tendencies, such natures are less apt to be found than in any other calling. The vivisectionist, as found in the ranks of medicine, is invariably, we might say, a man not only of superior education in his profession, but moved by an ambition to enhance that profession. The mercenary individual to whom the practice of his profession is only a means of acquiring wealth, is not very apt to devote the time, expense and study necessary to vivisection. To aver that the men who have been enabled through their vivisections, to place physiology where it stands to-day, are so cruel in their nature that they would wantonly inflict suffering on the meanest of God's creatures, would be to declare an absolute lack of faith in human nature. We venture, moreover, to assert that the most industrious vivisectionist who ever lived, never inflicted in the course of a single year, a tithe of the suffering which a sportsman frequently inflicts in a week's shooting. The arguments of the anti-vivisectionists are made up in great part of sophistry, and while their impassioned appeals may succeed in stirring up animosity, in some circles, against the honest searcher into the mysteries of the animal mechanism, with a view to the addition to the sum of human happiness, they will have little influence on the saving good sense of society.

It is scarcely necessary at this late year of the nineteenth century, to devote any serious consideration to the anti-vaccinationist. That he should succeed in attracting quite a following is not surprising, when we consider the peculiarities which go to make up the complexity of society; but there is little danger of his succeeding in preventing the application of the prophylactic means which has so largely shorn small-pox in its horrors. An occasional physician is found in the ranks of the anti-vaccinationists, but it is a significant fact that we have yet to meet one who is himself not vaccinated, or who has applied his principles to his own family.

Digitalis as an Anaphrodisiac.

IT is maintained by some that procreative power, as well as the sexual appetite, diminishes inversely to the development of intellectuality. The seat of the former being in the posterior lobes of the brain, the diversion of energy to the cerebrum, or organ of intellectual function, is at the expense of desire and ability in the direction of the perpetuation of the species. The frequency of sterility and small families, and the inferiority of the progeny, of men who have been noted in history for their intellectual achievements, are referred to in support of their position. The facts that the native American element is growing less with each succeeding generation, and that the increase in the population of this country is due to immigration, and the immediate offspring of immigrants, is said to be largely attributable to the superior intellectuality of the native element. Doubtless this element is more intellectual than the foreign element which seeks our shores, and possibly this fact has something to do with the infecund marital unions, but we should hesitate to believe that this intellectuality is the prime factor in the causation of small families, unless, indeed, the inventive genius of the American female as shown in her efforts to prevent the legitimate fruit of the marital relations, be regarded as a result of superior intelligence.

But to follow the above subject where it would naturally lead us, would be to depart from the limits to which the GAZETTE, as a therapeutic journal, is restricted. We may be permitted to remark, however, that the demand for aphrodisiac remedies is large, and probably on the increase in this country, and there are few branches of unprincipled quackery more profitable than that in which increased virility of the male sexual apparatus is promised. The cause of this apparent increasing prevalence of sexual debility we shall not seek. In a recent work on the subject, Dr. Joseph W. Howe holds prolonged continence to be a cause of degeneration of the procreative powers. While we would fain believe, for the sake of the virtue of our people, that it is largely operative in the debility in this direction, in these latter days, we are constrained to be very skeptical on this point.

While, however, atony of the sexual apparatus is the affection of these organs for which medical advice is most frequently sought, the physician is also

occasionally consulted for relief from erotic impulses. In the case of young men virtuously disposed, the activity of their sexual functions and the intensity of desire, is frequently a source of mortification, and not infrequently the considerate husband consults his physician for aid in subduing the imperious passion within limits commensurate with the ability of an invalid or less rugged wife. The drugs at his command are comparatively few, and when the bromides have failed to effect the desired end, other medicines are prescribed with comparatively little confidence. In view of these facts the statement by Dr. N. L. Folsom, in the Medical World, that he has found digitalis to be effectual in allaying the sexual impulse, will prove of interest. Administered in doses of ten drops of the tincture, three times a day, he claims it will allay excitability of the organs. In some cases it may be necessary to increase the dose to a teaspoonful.

The Jequirity Bacillus.

IN THE light of the above reflections on the bacillus theory of disease, recent discoveries touching the jequirity bacillus are not devoid of interest. When de Wecker found the remarkable results which he subsequently reported, to follow an application of an infusion of the jequirity bean to trachomatous lids, he attributed the reparative inflammation to the action of the bacilli with which the infusion soon swarms. This jequiritic inflammation was, indeed, regarded as another proof of the agency of bacilli in causing disease. Subsequent observations have, however, not confirmed these assumptions. Dr. E. Klein has recently conducted experiments, the result of which goes to show that the jequirity bacillus is incapable of exciting the characteristic inflammation following the application of the infusion containing it. In the pus discharged from an eye suffering from this inflammation, these bacilli, are, moreover, absent. Dr. Klein declares that although when boiled for a very short time the jequirity infusion is destroyed as to its effects on the eye, it is not sterilized by being thus boiled; on the contrary, when kept in an incubator, it shortly swarms with the bacillus and its spores. The bacillus from such an infusion transferred to a peptone solution, or to a jequirity infusion sterilised through a half hour's boiling, can be cultivated, but the infusion though swarming with them thus cultivated, has no power of inducing ophthalmia. It is thus evident that the bacillus is not the active agent in causing jequiritic inflammation, but that the cause is a something which the microscope cannot discover, although it can be destroyed by boiling.

The result of Dr. Klein's experiments cannot but have an important influence on the belief in the bacillus theory of disease. It was quite natural to assume that the bacilli with which the infusion swarmed, were the immediate cause of the inflammation—more natural, indeed, than to assume that the bacilli found in the sputa of tuberculous patients are the cause of the tuberculous process. The fact that this assumption was unwarranted cannot fail to strengthen in their position those who refuse to yield at once to a belief in every discovery of a disease-producing parasites. Much better than to be so credulous will it be to pass on the connection between these discoveries and the affections in which they are found, the Scotch verdict "not proven."

The Metric System.

SEVERAL additional communications to those which we have already published on the metric system, have been received. They were, doubtless, written before the receipt by the writers, of the last issue of the GAZETTE, in which the discussion of this question was closed. We have prepared and have published in our advertising department, where it will be continued for some time, a table and rules for the conversion of the denominations of the metric into those of the system in vogue, and *vice versa*. This is in response to what we believe to be a very general wish on the part of our readers, who desire some guide to which they may readily refer. We would suggest an occasional reference to this table by all. Such reference will soon convince, even those who believe themselves "too old to learn new tricks," that the difficulties in the way of familiarity with the new system, like most of the other difficulties which beset us in our pilgrimage, are magnified by distance and vanish when approached with a determination to surmount them. While we shall when quoting from, or reproducing in their entirety, articles in which the metric system is employed, translate the quantities given into the denominations of the system in which we were trained, the comprehension of such articles will, nevertheless, be facilitated by a familiarity with the terms in the original.

We embrace this opportunity of explaining that in our translation of the terms of the metric system there will be found occasional discrepancies between the quantities given and those which the reader may arrive at by a strict conformity to the rule for translating. As a matter of fact an exact translation is impracticable in the majority of cases, and we aim only at the closest approximation which can be conveniently expressed in the terms of the old system. For instance, .01 gramme is translated gr. $\frac{1}{6}$, while the more exact equivalent is $\frac{154323}{1000000}$, and a gramme is given as 15 grains, while it is more exactly $15\frac{4323}{10000}$ grains, and so on throughout. If doses were determined by exact mathematical calculation, the precise condition of the system at the time of giving and the exact potency of the drug being the basis of such calculation, these discrepancies in translating might be important. When it is remembered, however, that doses are relative and that a dose of Dover's powder "weighed by the eye" is generally equally effective with a dose weighed on a scale of such delicacy that a single hair is sufficient to turn it, the need of minute exactness in translating the denominations of one system into those of the other, is not so apparent.

Touching Circulations.

GAILLARD'S Medical Journal for April, gives the following statement of the sizes of the subscription lists of the several medical journals which claim to take the lead in the matter of circulation: "The largest circulation of any medical journal is claimed by the British Medical Journal, with something over 12,000; the New York Medical Record claims the same, with a circulation somewhat over 10,000; the THERAPEUTIC GAZETTE does the same with a circulation of over 12,000, and so on. The Medical Brief, of St. Louis, has, it is said by its editor, 25,000. Whether that journal is to be recog-

nized as a medical journal or not, is the question. The journals indicated above evidently consider that the Brief is not a medical publication. If it is, their claim is without foundation."

As it is important that absolute correctness be observed when speaking of the size of a journal's subscription, we are obliged to correct our contemporary's statement, in so far as it applies to the THERAPEUTIC GAZETTE. We are quite sufficiently gratified at leading our contemporary, the Medical Record, by a full neck, in the race for professional favor, and, therefore, insist on scaling our brother Gaillard's figures down to those which our list actually shows, viz., 11,000. We have little doubt, however, that before the present volume is closed, we shall be able to enter our claim for the extra thousand with which our partial friend has credited us.

We do not care to discuss the question of the Medical Brief's being a medical journal, in the accepted sense of the term, or to question the validity of its claim touching the size of its subscription list. There are, in round numbers, 75,000 practitioners of medicine in this country, and the journal which has succeeded in securing a subscription from *one out of every three!* of these, is certainly to be congratulated on the success of its business management; the fact also speaks volumes for the appreciativeness of the medical profession of this country. In the more immediate circle of our acquaintances the Brief has not been thus successful, but possibly it finds outside of that circle a more appreciative class of readers. Whether this possibility implies a compliment, or its reverse, to the circle of our acquaintances, is a question which those familiar with the Brief must decide.

EDITORIAL ABSTRACTS AND ANNOTATIONS.

The Nature and Treatment of Hay Fever.

In a paper contributed to the American Journal of the Medical Sciences for January, 1884, Dr. Harrison Allen claims that the means of effecting a cure of hay fever, a disease hitherto considered well nigh incurable, is simply to overcome the tendency to obstruction in the nasal chambers. He traces this disease to such obstruction caused by the swelling of the nasal mucous membrane. In an imperfectly divided group of cases of nasal catarrh the sensation of sudden obstruction of one or both nasal chambers is a conspicuous symptom. This sensation is accompanied by a constant change in the chambers themselves, namely, engorgement of the membranes over the turbinated bones, producing pressure against the septum and occlusion of the respiratory passages of the nose. The sensations are recurrent, but vary greatly as to the time of the day or season of the year. With some patients they are nocturnal and are associated with the recumbent position. With others they occur after meals only. With some they occur in the summer season; with others yet again in the winter. Patients having a disposition to obstruction during the summer and autumn report themselves as suffering from hay fever, while those having alternating attacks in the right and left chambers report with nasal catarrh. The cases so far studied exhibit one feature in common, namely, that the inferior turbinated bones lie well above the plane of the floor of the nasal vestibule. In many persons not the subjects of hay fever and allied disorders the lower free portion, including, of course, the inferior border of the bone, lies below the plane of the floor of the nasal vestibule, and in ordinary inspection the inferior meatus is out of sight. It will thus be seen that the mucous membrane, which is known to be the most fragile, is also the most exposed to irritation from extraneous substances and to changes in the temperature of the surrounding air. The conclusions which Dr. Allen draws from six cases, of which he made a special study, may be summarized as follows:

1st. That the treatment of all conditions of obstruction of the nasal chamber, no matter from what cause arising, can be successfully carried out by destroying the causes of obstruction. If the cause be an overgrowth of bone tissue it must be filed, sawed or drilled away. If it be caused by a divided cartilaginous portion of the septum, such portion must be reset in a new place. If, as is often the case, it is due to periodic turgescence of the mucous membrane or the result of secondary hypertrophies, such growth must be destroyed either by the galvano-cautery, by the snare, or by caustic acids.

2d. That the treatment of hay fever and allied periodically recurring nasal affections, in no way differs from the treatment of other nasal diseases accompanied by obstruction, and that the treatment may be conducted during an attack as well as in the intervals between any two attacks.

Jaborandi as a Diaphoretic and Galactagogue.

Dr. Chas. Wesley Rook, of Quincy, Ill., contributes to the St. Louis Medical and Surgical Journal a report of several cases in which he administered jaborandi. In one case of puerperal albuminuria the œdema of the feet and limbs disappeared, and cramping pains which the patient had in her side and a severe headache, vanished. In two days the œdema, the vague irregular pains, and headache began to return, when a renewal of jaborandi produced complete freedom from suffering. Within a few days it was again necessary to repeat the dose, with the same usual happy result. Under the continued use of the remedy the patient went on to the full time and was delivered without any untoward symptoms. In another case the galactagogue action of jaborandi was beautifully illustrated. At the time of confinement the breasts were but moderately distended and the nipples flat. Simultaneously with the appearance of the perspiration, and the increased flow of saliva, which are the physiological effects of the drug, the milk began flowing in a stream from the left breast and so continued during the active stage of diaphoresis. The drug was administered on account of a high fever, and not with a view to securing any galactagogue action, and consequently no directions were given prohibiting the application of the child to the breast during active diaphoresis. The attendants not wishing to see the child's living wasted, applied the infant to the breast until it could absolutely swallow no more, when it gave two sudden convulsive starts, then fell asleep, and slept for several hours, at the same time perspiring at a rate, in proportion to the body weight, far excelling its

mother. No deleterious effect was observable in the child.

Dr. F. A O'Brien, of Atlanta, Ga., communicates to the Medical Record his experience with the use of jaborandi in Bright's disease. Given in small or moderate doses for a long time in the various forms of albuminuria classed under this head, he has observed very excellent results. He believes it has a specific influence on the kidneys, permitting the tubules to relieve themselves of the inflammatory products that block up their lumina. He has found that the drug is better borne when combined with nux vomica than if exhibited alone.

Hydrargyri Tannicum Oxydulatum.

The Medical News reproduces from Annal. de Dermat. et de syphile, a synopsis of results of observations and experiments by Dr. Sigmund Lustgarten with a new mercurial salt, hydrargyri tannicum oxydulatum, in the treatment of different forms of syphilis. This salt, the tannate of the protoxide of mercury, contains 50 per cent. of mercury; it is a dull green powder, without odor or taste, and is soluble only when decomposed. The process of reduction takes place under the influence of the alkaline reaction of the intestinal juices. The new drug has been prescribed in two or three doses of one and one-half grains every day, but in spite of this exceedingly large dose no trouble of the stomach and bowels has been observed, nor any of the trouble usually seen when the ordinary mercurial preparations are administered. On the contrary, in ten cases treated, comprising every period of syphilis, and especially cases of relapse of a very rebellious nature, as syphilides with small papules and pustular syphilides, there was so rapid a retrogression of the lesions that Lustgarten does not hesitate to place the new drug by the side of the best mercurial preparations hitherto employed.

We are not aware that this salt has as yet been placed on the market in this country, although we are informed it is being prepared in the laboratory of Parke, Davis & Co., from whom it may be secured.

Agaricine in Night-sweats.

The number of remedies which are recommended for the relief of night-sweats in phthisis, indicate very clearly that this symptom is a very important one and very difficult of relief. Among the later additions to the physician's armamentarium may be mentioned agaricine, the active principle of white agaric. This substance has recently been made the subject of an interesting study by Seifert, of Wurzburg, the results of which have been epitomized in the London Lancet. After many trials Seifert has come to the conclusion that pills containing five milligrams, (1-12 gr.,) of the alkaloid give the best results in checking the excessive secretion of sweat. As with many other drugs the consumer becomes accustomed to agaricine, and it is, therefore, advisable to begin with half a pill and to gradually increase the dose. Account must also be taken of the time at which to administer the remedy, as it has been shown that agaricine does not produce its effects for five or six hours. Not only is the excessive perspiration controlled, but the cough becomes less frequent, and sleep is more tranquil and continuous. Hypodermic injections have been employed with success, but they are not recommended on account of the production of disagreeable sensations at the site of an injection.

Alvelos—A New Cure for Cancer.

The statement that any remedy has been discovered which will obviate the necessity of a resort to the knife in the treatment of cancer, will be met with incredulity, and in giving the following from the Lancet we give it without comment and simply for what it is worth: Dr. Velloso, of Pernambuco, introduced the remedy to notice in a communication to the Journal de Receife. He states that the plant, which is commonly known by the name of alvelos, belongs to the euphorbiaceæ, and is indigenous to Pernambuco. He writes that a magistrate, who was suffering from epithelioma of the face, and who had returned to his estate despairing of relief, was entirely cured of his disease by the topical application of the juice of the plant. On the strength of this report Dr. Vellosa tried the remedy in the case of cancroid of the nose, and in one of epithelioma of the lip, with the result that the first patient was completely cured in 40 days, and the second in less than two months. These results, he thinks, justify a trial of the remedy, especially in uterine cancer. The action of the juice of the plant is irritating, producing a spreading dermatitis without much pain, and the application of the cut stem or the juice of the fresh plant to the diseased part, is said to result in the destruction of the morbid tissue which is replaced by healthy granulations, doing the work, in fact, of the chloride of zinc paste.

It is clear that if the remedy possesses only escharotic action, its value cannot be said to be very superior to that of other well-known caustics. The fact, moreover, that only the fresh juice of the plant produces the effects claimed, must limit its use very largely to the region in which the plant grows.

Calcium Sulphide in the Treatment of Diabetes Mellitus.

Dr. C. M. Cauldwell contributes to the New York Medical Journal, a report of three cases in which he has employed the calcium sulphide to good purpose, in the treatment of diabetes mellitus. He refers also to the favorable experience which other physicians have had with the same drug, combined with proper hygienic treatment. Of the three cases in which he administered the remedy, two were so much improved as to justify him in pronouncing them cured. In the first case improvement commenced in two weeks, but the sugar did not entirely disappear until after six weeks of treatment. In the second case the benefit was unquestionable at the end of three weeks, and no sugar was detected after one month of treatment. His conclusion is that although calcium sulphide is certainly not a specific in diabetes, it yet seems worthy of a trial in persistent cases of that distressing disease.

Remedies for Trial.

The American Druggists advises a trial of the following remedies for the diseases indicated. They enjoy a certain degree of popularity among the

people, and may possibly have more virtue than physicians are disposed to concede, although in the case of some of them, their administration would be quite in accordance with rational therapeutics: Try pop-corn for nausea; try sun bath for rheumatism; try cranberry poultice for erysipelas; try a gargle of lager beer for sore throat; try swallowing of the saliva when troubled with a sour stomach; try eating fresh radishes and yellow turnips for gravel; try eating onions and horse-radishes to relieve dropsical swellings; try taking cod-liver oil and tomato catsup if you want to make it palatable; try snuffing powdered borax up the nostrils for catarrhal cold in the head; try hard cider, and one glassful three times a day, for ague or rheumatism; try breathing the fumes of turpentine or carbolic acid to relieve whooping cough; try a cloth wrung out of cold water, put about the neck at night, for sore throat; try planting sunflowers in your garden if compelled to live in a malarial neighborhood.

The Iodide of Potassium as an Anti-Galactagogue.

It would seem from recent references to the subject, in our exchanges, that there is a demand for some drug which shall effectually suppress the secretion of milk. Dr. Verrall recommends, in the British Medical Journal, iodide of potassium in eight-grain doses, combined with sulphate of quinine in three-grain doses, three times a day.

Dr. Connell reports, in the Medical Age, a similar use of this salt. He prescribed it in forty-grain doses, three times a day, in such cases in which the necessity for the suppression of the secretion seemed to be pressing.

Increasing Prevalence of Cancer.

In an article on this subject, the Popular Science Monthly quotes from the returns of the New York Board of Health, to show, in the alarming increase of cancerous affection, a reason for the establishment of a hospital exclusively devoted to the care and treatment of the disease: "In 1869 there were 304 deaths from cancer, being a little over one per hundred of deaths from all causes. In 1879 there were 572 deaths from cancer, in this city, or a little over two per hundred of all deaths; that is, in ten years the proportion of deaths from cancer, had nearly doubled, one death out of fifty being from this dreadful disease. In 1880 there were 659 deaths from cancer, or 2.06 per cent. of all deaths in this city; in this latter year cancer actually caused more deaths than scarlet fever, this being a very light year, with 618 deaths from this latter disease. In 1882 the mortality-tables showed 731 deaths from cancer, in this city, or more than two daily. During these fourteen years 6,843 persons died of cancer, in New York city. Patients suffering from cancer are welcomed in no hospital; in most institutions they are absolutely refused, and nowhere in this country are cancer cases grouped together with a view of studying the disease as to its nature and cure."

Ergot in Pneumonia.

Dr. N. S. Davis, professor of practice and of clinical medicine in the Chicago Medical College, contributes to the Journal of the American Medical Association, of which he is editor, a clinical report of two cases of pneumonia, in which certain alarming features of the disease were promptly relieved by the exhibition of ergot. He remarks, that there is no fixed or routine treatment which is adapted to all cases of pneumonia, simply because the morbid processes which constitute the different stages of pneumonic inflammation, are liable to be much modified by the previous condition of the patient, and the co-incident meteorological and sanitary influences that surround him. The benefit to be derived from ergot is when there is a demand for more steadiness and tone to the action of the heart. Given in connection with digitalis under those circumstances it is, perhaps, the most reliable agent we possess for resisting the over-engorgement of the pulmonary vessels, during the first stage of the disease, in which the condition of the heart referred to, is found to exist.

Paraldehyde.

This substance seems to be attracting considerable attention in certain quarters, because of its reputed hypnotic properties. Dujardin-Beaumetz has examined into its physiological action and therapeutic effects, making comparative observations between it and other well-known hypnotics and anodynes. He found that it is much less disagreeable to take than some of them, chloral, for instance. Its effect is to produce a sleep very closely simulating the natural sleep, the subject awaking without heaviness or headache. It possesses scarcely any anodyne power, having had no effect in relieving the pain in cases in which its powers in this direction were tested. He regards it as a valuable addition to our hypnotic agents.

Damiana in Sexual Debility.

The Indiana Eclectic Medical Journal declares, as a result of the observation of its editor from a six years' test in his practice, that damiana will both generate a desire for sexual indulgence and impart a power for the consummation of the act, in those of either sex in whom the desire and power have prematurely degenerated. In order to secure its effects it is, of course, necessary that a reliable preparation of the drug be employed. In view of the fact that there are spurious preparations in the market, care in the selection of the brand becomes all the more important.

Chestnut Leaves in Whooping Cough.

Dr. Cooperider, of Taylorsville, Ind., reports in the Can. Med. Record, successful results from the use of fluid extract chestnut leaves in whooping cough. The result is observed not only in the relief of the paroxysms but the actual cure in from four to five days. The dose is from 15 to 60 drops, according to the age of the patient. If the child is old enough, it is given in hot water as an infusion. To a small child it should be given in a simple syrup or elixir, on account of its taste.

Normal Liquid Ergot.

Dr. S. W. Caldwell, of Trenton, Tenn., reports in the Mississippi Valley Med. Monthly, his use of ergot hypodermically with favorable results in a case of enlargement of the spleen. He has found that the use of normal liquid ergot is attended with much less pain than follows the employment of the ordinary ergot extracts.

Book Reviews and Notices.

Shakespeare as a Physician. Comprising Every Word which in any way relates to Medicine, Surgery or Obstetrics, found in the complete works of the writer, with Criticisms and Comparison of the Same with the Thoughts of To-day. By J. Portman Chesney, M. D., Ex-Secretary Medical Society of the State of Missouri; Corresponding Member of the Gynæcological Society of Boston; Professor of Gynæcology in the Northwestern Medical College, St. Joseph, Mo., etc., etc.

Chicago: J. H. Chambers & Co.,

The versatility of the myriad-minded bard of Avon is a theme on which the students of his peerless works never tire of dilating. There has been only one Shakespeare and the vocabularies of all tongues have been taxed as they have been taxed in the expression of no other thought, in singing his praises. There are few vocations among men whose literature, appearing in more recent years, is not embellished with quotations from his inimitable productions. If his familiarity with law has led lawyers to believe that he was especially educated in their profession, his familiarity with medicine has none the less led physicians to believe that he must have been a physician. Even the casual reader must have been struck with the richness of his allusions to drugs and diseases, of both body and mind, with which medical men only are supposed to be familiar. Few, however, who have not read his works with a special reference to the subject, will be prepared to find an octavo volume of 225 pages, like that before us, chiefly made up of quotations therefrom bearing on medical topics. Dr. Chesney has shown himself a diligent student, and has arranged the matter which he has collated under the several heads of Obstetrics, Psychology, Neurology, Pharmacologia; Etiology, Dermatology, Organology, Chirurgery and Miscellaneous. His comments and introductions are very timely and intelligent, and materially assist to a proper comprehension of the point of the reference; in more obscure quotations.

It would be exceedingly interesting, and profitable as well, to give liberal quotations from the book, but the limits of our space forbid more than a very few. *Obstetrics:* King—"Now, Lovell, from the Queen what is the news?" Lovell—"I could not personally deliver to her what you communicated me, but by her woman I sent your message; who return'd her thanks in great humbleness, and desir'd your highness most heartily to pray for her." King—"What says't thou? Ha! to pray for her? is she crying out?" Lovell—"So said her woman; and that her sufferance made almost each pang a death." *Psychology:* Abbess—"And therefor came it that the man was mad; the venom clamors of a jealous woman poison more deadly than a mad dog's tooth. It seems his sleep was hind'red by the railing, and therefore comes it that his head is light. Thou says't his meat was sauced with thy upbraidings: unquiet meals make ill digestions, whereof the raving fire of fever is bred; and what's a fever but a fit of madness? Thou says't his sports were hindered by thy brawls; sweet recreation barred, what doth ensue but moody and dull melancholy, kinsman to grim and comfortless despair, and at her heels a huge infectious troop of pale distemperatures and foes to life? In food, in sport, and life-preserving rest, to be disturbed, would mad man or beast." *Neurology:* Iago—"My lord has fallen into an epilepsy; this is his second fit; he had one yesterday." Cassio—"Rub him about the temples." Iago—"No, forbear. The lethargy must have his quiet course, if not he foams at mouth; and by and by, break out to savage madness. Look, he moves; do you withdraw yourself a little while; he will recover strength." *Pharmacologia:* Friar—"Take now this phial, being then in bed, and this distilled liquor drink thou off; when, presently, through all thy veins shall run a cold and drowsy humor; for no pulse shall keep his native progress, but surcease; no warmth, no breath shall testify that thou livest; the roses in thy lips and cheeks fade to paly ashes; thy eyes' windows fall, like death when he shuts up the day of life; each part deprived of supple government, shall stark and stiff and cold appear like death; and in the borrow'd likeness of stark death thou shalt continue two and forty hours, and then awake as from a pleasant sleep." *Etiology:* Portia—"Is Brutus sick? And is it physical to walk unbrac'd, and suck up the humors of the dank morning? What! is Brutus sick, and will he steal out of his wholesome bed to dare the vile contagion of the night, and tempt the rheum and impured air to add unto his sickness?" *Dermatology:* Timon—"Consumption sow in hollow bones of men; strike their sharp shins, and mar men's spurring. Crack the lawyer's voice, that he may never more title plead, nor sound his quillets shrilly; down with the nose, down with it flat; take the high bridge away from him, make curl-pated ruffians bald; and let the unscarr'd braggarts of the war derive some pain from you." Could there be a better description of syphilis than this? *Organology:* Menenius—"Note me this, good friend; your most grave belly was deliberate, not rash like his accusers, and answered: 'True is it, my incorporate friends,' quoth he, 'that I received the general food at first, which you do live upon; and fit, it is, because I am the store-house, and shop of the whole body; but, if you do remember, I send it through the rivers of your blood, even to the heart, the brain, the strongest nerves, and small inferior veins; they all receive from me that natural competency whereby they live.'"

The letter press of the book is excellent, albeit this praise does not extend to the few illustrations which it contains. The second edition, which will, doubtless, soon be called for, can, moreover, be made an improvement on the first in the matter of proof-reading. We would suggest also that the references to contemporaneous quackery do not improve the tone of the book, which is, nevertheless, one which few physicians who have received an inkling of its scope will fail to possess themselves of.

A Companion to the United States Pharmacopœia. Being a Commentary on the latest Edition of the Pharmacopœia and Containing the Descriptions, Properties, uses and doses of all officinal and numerous unofficial drugs and preparations in current use in the United States, together with practical hints, working formulas, etc. Designed as a Ready Reference Book for Pharmaceutists, Physicians and Students. With over 650 original illustrations. By Oscar Oldberg, Phar. D., Member of the Committee of Revision of the Pharmacopœia of the United States; Author of the "Unofficial Pharmacopœia." "The Metric System in Medicine," etc. Formerly Medical Purveyor of the United States Marine Hospital Service, and Professor of Materia Medica in the National College of Pharmacy, Washington, D. C., etc. And Otto A. Wall, M. D., Ph. G, Professor of Materia Medica, Therapeutics and Pharmacy in the Missouri Medical College, and

of Materia Medica and Botany in the St. Louis College of Pharmacy; Member of the Committee of the Revision of the Pharmacopœia of the United States, etc.

New York: William Wood & Co.

As is well known the sixth revision of the Pharmacopœia of the United States, to which this book is intended to be a companion, commentary and supplement, differs essentially from its predecessors in many respects. In order to enlighten the pharmacist and the physician, this work has been written. So much change has been made and so many new methods added which are unlike those with which the profession are familiar, and so much out of harmony with the prevailing manner of prescribing and administering liquid medicines, and although the strength and doses are very little changed, the old and new cannot be readily compared. Of course this in itself is a material disadvantage. The object of this work is to remedy this apparent difficulty. Besides it is a working manual—a supplement—containing much of value which was considered non-officinal in the original text. Working formulæ are given. The different strength of drugs are compared and the relative values given. In other words the object of this companion is to simplify the apparent difference between the old and new pharmacopœias, and render them both of more practical benefit to both the pharmacist and physician. An examination of this work leads us to acknowledge its merits. To the pharmacist and general practitioner we consider it of inestimable value, but more especially to those physicians who, from their peculiar circumstances, are necessitated to be their own pharmacists. To both we cordially commend it.

A Manual of Psychological Medicine and Allied Nervous Diseases, containing the Description, Etiology, Diagnosis, Pathology and Treatment of Insanity, with especial reference to the Clinical features of Mental Diseases, and the Allied Neuroses, and its Medico-legal Aspects, with a carefully prepared digest of the Lunacy Laws of the various States, relating to the Care, Custody and Responsibility of the Insane. Designed for the General Practitioner of Medicine. By Edward C. Mann, M. D., Member of the New York Medico-Legal Society, etc., with Photo-type plates and other illustrations. Price $5.00.

Philadelphia: P. Blakiston, Son & Co.
Detroit: John MacFarlane.

The subject of Insanity is one that attracts not only the attention of the physician, but also that of the citizen. The evident increase of this abnormal mental condition excites both the medical professor and the philanthropist. The different states of the Union, in their liberality towards these suffering citizens, cannot keep pace in providing for their care, comfort and cure. Why is it that the higher the grade civilization reaches, the faster and in an increasing ratio does insanity develope itself? It is a sad picture to behold, nevertheless must the fact be acknowledged. The object of the author in his work before us is to discuss its history and classification, its etiology and the importance of its early recognition; how to prevent it and how to diagnose and prognose it; the legal relation the insane have to the body politic, and their responsibility; instructions for giving testimony and the function of the expert in insanity trials. In fact, so minutely has he entered into the subject that the work can be called encyclopœdic.

The whole department of insanity has been examined and the most modern ideas of the subject are given to the reader. The different styles of letter-writing are given according to the nature of the insanity. The illustrations give the different facial appearances, and so life-like are they that no mistake need be made in their diagnosis. We have given much study to derangements of the mind and we have not met a work that contains so much and is so well arranged as the one we now refer to. A copious index concludes the book. We should say the work is invaluable, not only to the physician, but also to the legal profession. Even the alienist can learn much from its study. We highly commend it.

Year-Books of Medical Progress.—A Year-Book of Therapeutics for 1883. Edited by Royal W. Amidon, M. D.—*A Year Book of Surgery for 1883.* Edited by Charles H. Knight, M. D.

G. P. Putman's Sons New York, 27 and 29 West 23d street, London; 25 Henriette street, Covent Garden, 1884,—with compliments of the Publisher, and can be obtained through Messrs. Phillips & Hunt, and Jno. MacFarlane of this city.

The object of the above works is to give a condensed review of the progress and important contributions in therapeutics and surgery for the past year. In so doing the publishers have selected medical gentlemen fully qualified to perform their respective duties. We were always sorry when the New Sydenham Society ceased to publish their annual handbook of medicine and surgery. It is not every one who can take a sufficient number of medical journals to note from them all that is going on in these chief departments of medicine (for we hold surgery to be part of the whole science.)

The Messrs. Putnam's Sons have done a good thing for the practitioners of medicine in issuing these annuals. They ought to be widely patronized. Every medical library should contain them. In fact we would not be without them at double the cost. The are well edited and handsomely published, each volume costing $1.50. Physicians and surgeons who wish to keep up with the times cannot afford to be without them.

On the Pathology and Treatment of Gonorrhœa. By J. L. Milton, Senior Surgeon to St. John's Hospital for Diseases of the Skin. London. Fifth Edition.

Diagnosis and Treatment of Diseases of the Heart. By Constantine Paul, Member of the Academy of Medicine, Physician to the Laviboisiére Hospital. Translated from the French.

New York: Wm. Wood & Co, 56 and 58 Lafayette Place, 1883.

The above volumes are, respectively, the February and March numbers of Wood's Library of Standard Medical Authors, for 1884. Much has been written on both subjects. Every physician and surgeon has his own ideas on the question of both pathology and treatment of gonorrhœa, and but little has been written on diseases of the heart that will excel Stokes of Dublin. Nevertheless the advances in the power and properties of the materia medica it is important to know, and it is in this department that advance has been made in the treatment of these diseases. As a part of the library they fill an important niche, and the writers are fully qualified to thus present their views and opinions. We still advise our readers to subscribe for the series.

Elements of Pharmacy, Materia Medica and Therapeutics. By William Whilla, M. D. (Q. U. I.), Physician to the Belfast Royal Hospital; Consulting Physician to the Ulster Hospital for Diseases of Women and Children;

Vice-President of the Ulster Medical Society. With lithographs and wood-cuts. Second Edition.
London: Henry Renshaw, 356 Strand. 1884.
United States: Henry C. Lea's Son & Co., Philadelphia.

This is a complete little work for the student of pharmacy, materia medica and therapeutics. As an egg is full of meat, so is this book full of practical instruction. One hundred pages are devoted to the science of pharmacy, and when we say science we mean it to include all details.

Part II. takes up materia medica, briefly describ- the article, its doses and incompatibilities. Nearly one half the volume is devoted to therapeutics and indeed is the most valuable part of the book.

Part IV. is devoted to un-officinal remedies, of which the author finds a large number which in fact seemed to be as much used as the officinal.

Part V. directs the attention of the student and reader to the administration of remedies. This includes particularly how to administer remedies and how to write prescriptions, two very important factors in the commencement of the young physician's career. A table of chemical reactions and a copious index completes the book. We cordially commend it.

The Cinchona Barks: Pharmacognostically Considered. By Fredrick A. Flückiger, Ph. D., Professor in the University of Strassburg, Germany, and author of Pharmaceutical Chemistry. Translated from the Original Text with some additional notes, by Frederick B. Power, Ph. D., Prof. of Pharmacy and Materia Medica in the University of Wisconsin. With Eight Lithograph Plates and one Wood-Cut.
Philadelphia: P. Blakiston, Son & Co., 1,012 Walnut street, 1884. Price, $1 50.
Detroit: John MacFarlane.

This is a very interesting book, more especially for the pharmacist and botanist—even the chemist should be included. Every physician should also be well acquainted with the different varieties of the quinine producing tree. The object of this book is so to inform him. Although of no direct therapeutical value it is a book of the character every physician should possess. Hence to all we advise a place on the general shelf, and also a thorough reading before being so placed.

The Medical Directory of Philadelphia for 1884. Edited by Samuel B. Hopkin, M. D.
Philadelphia: P. Blakiston, Son & Co., 1,012 walnut Street.
Detrot: John MacFarlane. Price, $1.50. 1884.

This is a very handsomely prepared directory of the physicians and surgeons of Philadelphia, and to the citizens of that ancient burgh should be of much value, and which we presume to be the case. A list of druggists is given, and also the peculiarities of the different physicians so far as regards to the kind of practice, can be learned. It is handsomely issued by the publishers and well worth the cost.

Notes on Opium Habit. By Asa P. Maylert, M. D., Member of the Medical Society of the County of New York; Member of Harlem Medical Association; Physician to the Womens' Christian Home, etc. etc. G. P Putman & Sons. 1884. Comp. of Publishers.

The author in his preface, states it as one of the objects of the paper "a more humane method of treatment." Will he please give his reasons for his ideas of the latter?

PAMPHLETS.

The following have been received, with the compliments of the authors—for which we extend them our thanks:

The Disease of Inebriety and its Social Science Relations. By T. D. Crothers, M. D., Superintendent of Walnut Lodge, Hartford, Conn., Editor of the Journal of Inebriety, etc. Read before the American Social Science Association, at Saratoga, N. Y. September, 8, 1883.

Excerpts from Prof. Hugo Schults's Treatise on Eucalyptus Oil. Translated and Supplemented by Baron Ferd. Von Mueller, R. C., M. D., F. R. S., M. D., Ph. D. F. G. S., Government Botanist in Victoria, etc. Reprint from the Australian Medical Gazette for 1883.

A Treatise on Syphilis. Its Rapid and Progressive Development Among the Races, together with its direful effects on the Human family. Can it be eradicated from the Human System by Medication? By James W. Prince, M. D., Hot Springs, Arkansas.

Official Register of Physicians and Surgeons in the State of California. By Authority of the Board of Examiners of the Medical Society of the State of California. R. H. Plummer, M. D., Recording Secretary, San Francisco. Special thanks.

A Defense of Medicine and of the Medical Profession. Annual Address to the Medical Society of the District of Columbia. Delivered January 19, 1884, by James R. Morgan A. M., M. D., Washington, D. C., 1884.

Fourth Annual Report of the State Board of Health, Lunacy and Charity of Massachusetts, 1883. Supplement containing the Reports and Papers on Public Health. Boston. Comp. of Secretary of State.

Deterioration of the Puritan Stock and Its Causes. By John Ellis, M. D., Author of Avoidable Causes of Disease, etc., etc. New York. 1884. Published by the author and with his compliments.

Aneurism of the Femoral Artery and a Knife Wound of the Intestines. By W. O. Roberts, M. D., Professor of Pathology and Operative Surgery in the University of Louisville. 1884.

Report of Secretary of State Board of Health West Va., for the years ending December 31st, '81, '82 and '83. Wheeling. 1884. Third Annual. Jas. Reeves, M. D., Secretary.

Remarks on the Mechanical Therapeutics of Amenorrhœa. By J. H. Carstens, M. D., Professor of Obstetrics and Clinical Gynecology. Detroit Medical College, 1884.

Peroxide of Hydrogen in Suppurative Conjunctivitis and Mastoid Abscesses. With a report of two cases. By A. E. Prince, M. D., of Jacksonville, Ill. Reprint. 1884.

Comparative Researches on the Preparation and Use of Different Peptones. By Chapoteaut, Pharmacien De Premiére Classe, Paris, 1883.

Use of Peroxide of Hydrogen in Diphtheria. By R. J. Nunn, M. D. Savannah, Georgia. Physician to the Female Department of S. Hospital.

Dysmenorrhœa. Its Treatment by Dilatation. By William Warren Potter M. D., Buffalo, N. Y. Reprint from Medical Record, 1884.

Farrand Training School for Nurses. In connection with Harper Hospital, Detroit, Mich. Rev. D. M. Cooper, Sec'y.

Essence of Santal. Its Origin, Preparation and Properties. By L. Midy, Pharmacien de 1st Classe. Paris; 1883.

Irving's Library—A Century's Message. By Andrew D. White, LLD., President Cornell University. 1883.

Meteorology. Oakland, California, for 1882-3. 1883-4. By J. B. Trembley, M. D.

New Remedies.

On Bedside Urinary Tests—All busy practitioners must admit the clinical utility and importance of accurate, time-saving, and portable tests, by which they may, during their rounds, decide with precision and certainty, and on the spot, pathological conditions of the urine, or satisfy themselves, and their patients, if need be, without delay, as to the soundness of that excretion. From the numerous contributions on portable urinary tests which have recently appeared in these pages, it is clear that practical men, who have long realized the serious inconvenience of carrying about caustic fluids for testing at the bedside,* are anxiously feeling their way to more manageable and handy yet equally trustworthy reagents, and I take it the profession at large is prepared to accept any useful suggestions towards this end. Hence the articles of Dr. Roberts, on Acidulated Brine,† of Mr. Stephen, on the Volumetric Estimation of Albumen,‡ of Dr. G. Johnson, on Picric Acid, and of Dr. Pavy. The corrosiveness of nitric acid and the causticity and instability of Fehling's solution, rather than want of faith in the trustworthiness of these tests, have, doubtless, mainly prompted the suggestion of more portable reagents. In the substitutes we therefore seek for compactness, handiness, and portability, without the sacrifice of the generally admitted reliability of the old forms for clinical purposes. Doubtless others besides myself have been trying to supply this desideratum, and may be prepared to offer useful hints. Having, however, attained to certain results which have satisfied my own clinical needs, I feel I should not delay further in communicating them to those of my professional brethren whom they may interest; and I do so with the hope that they may prove useful, especially in the saving of time to busy men, and may facilitate urinary investigation at the bedside. My experiments have embraced the qualitative and quantitative testing of albumen, sugar, and total acidity. I should make the preliminary statement that I have succeeded in all my reagents in abolishing the fluid state, and likewise the solid form, either of powder, crystal, or pellet. It occurred to me some time ago that evaporation of the test fluids I was then using, on chemically inert filtering-paper, linen, or similar fabric, would secure the deposition of the reagents in a finely-divided and concentrated state, a condition it was hoped favorable to such a rapid re-solution of them in the urine as to produce a quick and sensitive action on the constituents sought for. I soon discovered that my pieces of chemically charged paper were, when dropped into a small quantity of the urine in a test-tube, very delicate and cleanly tests; and being in the most portable and compact of all forms for clinical work, and, moreover, affording better results than I had previously obtained from the old corrosive test solutions, it was not long before I cleared my spoilt urinary case of the latter; and I can assure my readers I did so with a feeling of satisfaction and comfort. Then, inasmuch as it was an easy matter to graduate the papers with standard solutions of the reagents, I next proceeded to inquire how far this simple process could be carried in determining the quantities of albumen, sugar, and total acidity; in other words, I thus attempted to apply at the bedside the volumetric method of analysis in the form of pieces of filtering paper charged with definite quantities of the reagents with a quantitative color limitation on paper from which the percentage of the constituent sought for could be at once read off. Up to the present I am satisfied in having attained rapid and, for all practical purposes, sufficiently accurate results. I intend shortly, as a matter of curiosity, to scrutinize the figures indicated by my paper method for the estimation of albumen by the side of the burette with its standard solution; and I hope on some future occasion to be able to state definitely how near I can approach quickly at the bedside the results which can only proceed from the laboratory with its attendant delay. I must content myself in the present communication with my notes on—

THE QUALITATIVE ESTIMATION OF ALBUMEN.

When picric acid was brought forward by Dr. G. Johnson as a remarkably delicate test for albumen, it occurred to me as likely to assist in deciding the sensitiveness of the various albumen tests from clinical evidence rather than from the laboratory, to take a series of urines containing very small proportions of albumen, to subject them to all the best-known tests, and to carefully tabulate the results. Since then I have met with twenty urines, among others, which supplied the required condition, all being faintly impregnated with albumen presumably derived from the presence of a small quantity of pus, or of blood, or of both, as determined by the microscope.* The table of results annotated at the time of every testing is before me. All the urines were acid except one, which was alkaline. The reagents employed were the following:—

1. Strong nitric acid.
2. Boiling the sufficiently acid urine and afterwards adding dilute nitric acid.
3. Saturated solution of potassium ferrocyanide, and the urine freely acidulated by citric acid, as suggested by Dr. Pavy.†
4. Saturated solution of picric acid as advised by Dr. George Johnson.
5. Acidulated brine after Dr. Wm. Roberts.
6. Standard solution of potassio-mercuric iodide, after Tauret, and recently brought to notice by Mr. Stephen, with this modification—strongly acidifying the urine with citric acid instead of acetic.

The test fluid and the urine were in all the experiments brought into contact, as in Heller's method of using strong nitric acid, and the line of juncture was carefully examined for at least five minutes. Out of the twenty urines strong nitric acid failed to indicate the presence of albumen in sixteen instances, boiling in fourteen, acidulated brine in fourteen, and potassium ferrocyanide in twelve; while picric acid and potassio-mercuric iodide gave a distinct and generally a sharply defined ring of precipitated albumen in every case. The reaction was indicated by varying degrees of rapidity by the different tests; I must name the potassio-mercuric iodide and picric acid as the readiest; and of the two I would, if pressed for a preference, decide in favor of the former. I found as a rule strong nitric acid, acidulated brine, and potassium ferrocyanide much slower whilst bringing to light mere traces of albumen. I should here remark that I do not attach much clinical importance, so far as I can see at present,‡ to the ability which the most sensitive of these tests possess in the detection of albumen in minimal proportions; for if I did do so it might be justly thought by the practical physician that such observations as these indicate an ultra refinement in testing of no utility in daily work. They were simply made for the definite purpose of affording data suggestive of the most thorough of all the best tests for discovery of albumen in urine; and as such they undoubtedly point to the potassio-mercuric iodide and picric acid; and to potassium ferrocyanide and acidulated brine as next in order. I should remark that, with regard to potassium ferrocyanide, I am not quite satisfied that the method (Heller's) followed throughout these observations for

* Hence the fact of many medical men having given up urine-testing entirely during their rounds.

† The Lancet, vol. ii., 1882, p. 613.

‡ Ibid., vol. ii., 1882, p. 614.

* Whenever albumen was detected by any of the reagents mentioned in this paper, the urinary deposit was subjected to microscopical examination, and the impregnation was indicated, or at least suggested, by the presence of blood, pus, or casts.

† See The Lancet, vol. ii., 1882, p. 823.

‡ Since writing the above, observations have, however, caused me to modify my first-formed impressions as to the clinical value of the keenest albumen precipitant as at present known.

the sake of uniformity in obtaining the comparative results, fairly put to the trial the capacity of this test as an albumen precipitant, for on several occasions I noticed the production of a very slight opacity all through the urine instead of a well defined ring. I am, therefore, with this qualification in my mind, inclined to think somewhat better of it than the above-recorded number of failures might lead anyone to suppose. The outcome of these observations, as well as more recent ones, suggests to me the grouping of the tests in the following rising order of power to detect small quantities of albumen: 1. Strong nitric acid and boiling. 2. Potassium ferrocyanide and acidulated brine. 3. Picric acid, potassio-mercuric iodide, and the two new tests brought forward in this paper. I have, as a rule, found the members of each group to be nearly equivalent, and confirmatory of each other; and, further, the albumen which strong nitric acid and boiling discovered was always detected with greater facility by all the other reagents, and those tests which comprise the third group frequently reveal traces which the others failed to bring to light; lastly, potassium ferrocyanide and acidulated brine certainly took precedence over strong nitric acid and boiling. As confirmatory of the foregoing observations I may mention that I lately supplied an analytical chemist with some strongly albuminous urine, and he subjected it in the following way to a comparative examination by strong nitric acid and the tests I am introducing in the paper form. After diluting the urine until the albumen was just detectable by the acid, he proceeded to further dilution, when the reaction failed to appear, though still the more delicate paper tests distinctly indicated the presence of the albumen. The albumen precipitants which I find work well as test papers are: potassio-mercuric iodide, potassium ferrocyanide, the two new tests, and picric acid.

1. *Potassio-mercuric iodide* was introduced by Mr. Guy Neville Stephen to the readers of this journal* as an albumen precipitant discovered by Tauret of Troyes. I select it for production as a test paper because I formed a favorable opinion of it while working it side by side with the other tests, and because it enables one to readily determine the quantities of albumen at the bedside. I moreover found that this double halloid mercuric salt could be evaporated to dryness on filtering paper without impairing its albumen-precipitating powers; and the charge thus communicated still retains its integrity, though introduced over six weeks ago. Each paper contains one-fifth of a cubic centimetre of a standard solution, the formula for the preparation of which I hope to give in an article "On the Quantitative Estimation of Albumen at the Bedside," after my return from a holiday abroad. In the meantime I should say it differs considerably from that given in Mr. Stephen's paper. Hitherto, whenever the presence of albumen was indicated by this test paper, corroboration was furnished by picric acid, and the other tests of kindred power; and when the amount of albumen was such as to bring it within the range of less sensitive reagents, these also afforded confirmation. This mercuric salt is said to cause a quasi-albuminous precipitate in the urine of patients taking alkaloids; but I am not yet convinced of the correctness of this assertion, which I must leave, from want of conclusive evidence, neither positively confirmed nor denied. To this test I have repeatedly subjected the urine of one patient taking six grains of extract of opium every night and two grains of codeia twice a day, of another having two daily subcutaneous injections of morphia and atropia, and of another taking fifteen grains of salicine three times a day with this result: a very faint cloud on adding the paper and a delicate ring by the "contact" method of testing; but the same reactions followed the use of picric acid, and the microscope revealed the presence of pus cells. After giving up the salicine, the urine still gave the same faint indications of albumen in small quantity. But should this source of error exist, it is not likely to induce more than a semblance to the merest traces of albumen, and it is, moreover, easy to guard against it. Then, again, should a patient be taking an alkaloid, this series of test papers provides other equally sensitive albumen precipitants.

2. *Potassium Ferrocyanide*, when deposited to saturation on filtering paper, produces in conjunction with citric acid paper a reliable work-a-day test, for the detection of albumen in urine. In my hands it has proved almost as sensitive as the other test-papers here brought forward. The idea of ferrocyanide with citric acid originated with Dr. Pavy†, who proposes to introduce them to the profession as a compound pellet. As thus presented, this albumen test will doubtless be compact, portable, cleanly and efficient. Perhaps, however, some practitioners may prefer to carry in their visiting lists, or otherwise, a leaflet of combined ferrocyanic and citric paper, rather than a bottle or other vehicle enclosing the pellets. The great convenience of this test-paper, as of all the others, must appear, when it is known that at the bedside no further apparatus is required for the detection of albumen than a teaspoon or a wineglass,

3. *Two new albumen precipitants.*—During the past few weeks I have become acquainted with two precipitants of albumen in urine, which, so far as I know, have not received attention from the profession—and I am not aware that either of them has been applied as a urinary test. But until lately I felt some hesitation in introducing them to professional notice, lest by doing so I should unhappily create greater uncertainty as to the choice of the best and most generally useful albumen precipitant for clinical purposes than at present prevails; for I take it that medical men—at any rate many of the readers of the Lancet—are just now somewhat perplexed by the rival claims of picric acid, ferrocyanide of potassium, acidulated brine, and potassio-mercuric iodide on the one hand, and by their adhesion to the older methods, in which they have trusted so long, on the other. But favorable observations as to the clinical efficiency of these, what may be styled the latest competitors, and a desire to extend my paper method of analysis to other reagents, which may at least be sometimes usefully employed to determine results of a doubtful character, have decided me to ask my brother practitioners to give these new tests a trial by the side of the others.

(*a*) *Potassio-mercuric iodo-cyanide.*—While working with mercuric cyanide for another purpose, I found that when alone in saturated solution in water it failed to cause a precipitate in albuminous urine, highly acidulated by citric acid; but when mixed with potassium iodide, it threw down the albumen at once as a voluminous white cloud. The iodide and the cyanide combine, and produce a new double mercuric salt ($4KI,HgCy_2$), which crystallizes out of solution as beautiful colorless needles. When the solution of this iodo-cyanide is acidified by citric or other acid, a gas (hydrocyanic acid) is liberated, which when completely expelled by heat, leaves the albumen-precipitating power of the solution unimpaired. It would, therefore, appear that this free hydrocyanic acid takes no part in throwing down the albumen, and that the precipitation must be ascribed to the mercuric iodide combination with potassium iodide. If so, this is but another form of the potassio-mercuric iodide test; but whether it will prove in some way more useful than the latter, I cannot as yet say. It can, however, be readily reduced to paper; and when thus employed, I have always found it as rapid and as sensitive as the other albumen test papers all of which have hitherto afforded corroboration of its integrity and trustworthiness as an albumen precipitant.

(*b*). *Sodium tungstate* is another delicate test for albumen in urine. According to the Journal of the

* Op. cit.

† The Lancet, vol. ii, 1882, p. 823.

Chemical Society for March, 1874, it is stated that this salt had been employed by F. L. Sonnenschein as a sensitive blood test, producing with ammonia a deep green color, even when the blood was so dilute as not to be recognizable by the spectroscope, and as an albumen precipitant in the presence of acetic or phosphoric acid. I suppose this important observation has not attracted the notice of clinical observers, for I am not aware of any references to it in the medical journals in its obvious applications to urinary analysis. On mixing together equal parts of the saturated solutions of the tungstate (one in four) and of citric acid (ten in six), and of water, I obtained an albumen precipitant of great delicacy, rapid in operation, and one moreover, so far as I have ascertained, devoid of all objectionable qualities. When merely dropped into the urine, or used after the manner of Heller it has always quickly revealed the same minimal proportions of albumen as could only be brought to light by picric acid and by the other tests of equal keenness. But this combination, when evaporated to dryness on filtering paper, did not give results so satisfactory—they required about a minute to develop—as when, after previous acidification of the urine by citric acid, a paper charged with sodium tungstate only was used. The further capacity of this reageant as a detector of blood, at any rate in urine, I am sorry to say I cannot as yet confirm. Perhaps one or other of these albumen test papers will be found equally convenient in the consulting room as in the daily round; but should any practitioner prefer for the former a single solution, which will not stain the fingers, be free from all other objectionable qualities, and will, moreover, be stable and always ready for use, let me specially mention the acidified solution of tungstate, which has given me every satisfaction, and which I now prefer to any other liquid test for home use. Sodium tungstate is procurable as dry, non-deliquescent crystals, and is, moreover, very cheap; for a shilling will purchase as much as can be needed for the detection of albumen during the whole life-time of the busiest practitioner.

Citric acid.—All the foregoing reagents are inoperative as albumen precipitants unless the urine is highly acidified; their application should therefore be preceded or accompanied by a sufficient charge of acid. For this purpose citric acid is easily made available when deposited to saturation on filtering paper, and in this form it has afforded me uniformly satisfactory results with all the albumen test papers.

Compound papers.—Instead of using citric paper separately prior to the reagent paper, it has been combined by a thin layer of rubber with the latter as a single test paper in the case of sodium tungstate and of potassio mercuric-iodide.

4. *Picric acid* can be deposited to saturation on filtering paper, which becomes a most compact and cleanly vehicle, and which, moreover, quickly delivers its charge to water. Repeated observation has shown me that when united with citric acid, as in the test papers, picric acid is divested of all the objections that have been urged against it. A few drops of albuminous urine instantly turns the bright picric solution extemporaneously prepared from the test paper, into a muddy one, while the addition of more urine does not redissolve the precipitate as when picric acid alone is used. For the detection of small quantities of albumen (less than 1 per cent.) the "contact" method of testing is necessary; then it is best to make the picric solution in a wineglass, to take it up by the medicine dropper, and to glide it gently over the urine in the test tube.

How to use the test-papers.—About thirty minims of the urine are taken up by a nipple pipette, or medicine dropper, and transferred to a short test tube, preferably one about two inches in length. If turbid from urates, it should be gently heated. It is now strongly acidified by dropping into it a citric paper, which is shaken about for a few seconds, and may then be withdrawn or allowed to remain. It is not now necessary to ascertain if the urine is sufficiently acid; therefore without delay the test paper selected is allowed to fall into it. A simpler plan, and one which I find answers equally well, is to drop both the citric and the reagent papers into the urine, so that they may fall together to the bottom, and to one side of the test tube. The latter is now inclined, so that the urine may repeatedly and slowly flow over the paper, when, if albumen be present in small or medium quantity, a whitish cloud will very quickly gather above and below it, the more readily detected by intercepting the light by the hand, etc.; while, in striking contrast, the upper part of the urine will remain clear. If, however, the albumen exists in large proportion, it will not usually produce a haze about the paper, but will coagulate on, it and will slowly fall from it in clots. Then, in any case, on shaking the tube the urine will become less or more opaque, according to the amount of albumen present. If, on the other hand, the urine preserves its brightness, or if any turbidity it possessed prior to the introduction of the test paper is not increased, it may be inferred it is free from albumen. But inasmuch as it is just possible, though I have never found it so, it may not have been sufficiently acidified to enable the reagent to throw down the albumen, it is advisable to dispose of this suspicion by adding another citric paper; when, if no precipitation occurs, albumen is absent. The whole proceeding, of course, takes up very much less time than that occupied in reading this description of it. The reaction is practically instantaneous when the urine has been freely acidified prior to the introduction of the test-paper. It is, however, not so quickly obtained, though the delay only amounts to a few seconds, when, without previous acidification, the single compound test papers are used. The convenience and simplicity of the testing for albumen by these combined papers are very great, for the practitioner only requires to carry them in his visiting list or pocket book and to drop one into a little urine in a teaspoon or wine glass, when, after stirring it about for a second or two, the opacity of precipitated albumen will appear. Those who prefer to develop a zone of precipitation along the plane of contact of a test solution and the urine, can do so by aid of these papers. A test-tube and a wine-glass are required. Into the latter the reagent paper rolled up is placed with about fifteen minims of water, and, without shaking, is set aside, while a similar quantity of urine is put into the test tube with citric paper. After withdrawing the latter, the reagent, now in solution, is taken up by the pipette and is allowed to trickle down the side of the tube, in which it will collect at the bottom. After developing the ring, the two fluids may be shaken together, when the albumen will be more largely precipitated as a milky cloud.

The keeping power of the test papers.—None of the papers have been bottled or kept from the air and light during several weeks; on the other hand, they have been purposely exposed without covering. Still I cannot discover the least deterioration of their power to precipitate albumen or any change of color or of other physical quality. From the first I rather suspected the mercuric papers might not stand the exposure of daily work for any length of time; but I am now of opinion I over-estimated, if I did not misjudge, this possible source of failure. I am surprised they do not partake more than they appear to do of the deliquescence of the potassium iodide, which is merged in the new definite salts with which they are charged; for it was only after free exposure in a dampish room, without a fire, a trial to which no delicate test should reasonably be submitted, that they became slightly limp, but even then without showing any diminution of their albumen-precipitating property. So far I can assert I have seen nothing to cause me to doubt the stability of even these reagents employed as test-papers, and they are the only members of this series of albumen precipitants which *a priori* might be thought at all susceptible to the deleterious effects of atmospheric influences. Though referring to a test

touching another subject, I may say that my cupric papers, designed for the qualitative and quantitative estimation of sugar, and made over two months ago, are to-day as good and as sensitive as they were when freshly prepared.

In a leader of the Medical Times and Gazette for 1874* will be found the following passage, which tersely expresses the opinion of the writer as to the trustworthiness and adaptability to the requirements of medical work of the tests for the detection of albumen as then known: "The reader who has followed us so far will, we think, agree with us that none of the common tests are quite satisfactory, and that we still lack one which shall be cleanly, portable, cheap, and certain." I leave it for my readers to decide whether this remark still holds good. In concluding these notes on the qualitative tests for albumen, I must state my consciousness of the imperfection of isolated observation, however faithfully recorded, and I would fain seek the scrutiny of many eyes, to correct if needful, or to more truthfully limit, any of the matters here advanced. With this object in view I have asked Mr. Hawksley, 357 Oxford street, W., to place a limited supply of these test papers at the disposal of the profession, and to furnish gratuitously the series to anyone who desires to put them to a careful trial, and who will kindly communicate the results of their observations to me or to The Lancet. In the meantime I hope that favorable evidence will not be long forthcoming to prove, as I have found, how satisfactorily they meet the requirements of daily work at the bedside, and to indicate which of them should be regarded as the best workable tests. George Oliver, M. P., L. R. C. P., Lond., M. P., C. P., Lond., in *Lancet*.

Therapeutics of Skin Diseases by Means of Some Newer Remedies.—It has always been a necessity in the external treatment of skin diseases, to apply the remedies in such a way:

a) that the air be excluded, whenever its contact seems to be injurious.

b) that the secondary disease products, as crusts and scabs, be removed and their reproduction prohibited, as in the former, the lower uneven surface irritates the diseased skin and in the latter, the application of remedies directly to the part is prevented.

c) that the secretion of the liquid disease products, which go to form crusts, be limited, whether of a serous nature or of the consistency of pus, mixed with blood, sweat, sebum etc. or not.

d) that the remedies act directly and in a controllable degree upon the diseased parts, without injury to the surrounding healthy tissues.

To fulfil all these requirements, both in acute and and chronic processes, the following modes of application were chiefly at our command: plasters, salves, applications of ethereal or alcoholic solutions with a stiff brush, and finally the application of dry powders.

In regard to plasters, experience has taught that fats act more beneficially when applied compactly and they are thus used in the form of a plaster. But the requisite consistency of plasters can only be obtained in two ways; either by mixing fatty acids or wax with resin (gum resin, balsam) or caoutchouc dissolved in turpentine—or by the combination of fatty acids with lead. The former represent the resin plasters, the latter the lead plasters. But they do not easily incorporate foreign substances, and thereby lose a great deal of their beneficial action; and again we must exercise great care in applying resin plasters in inflammatory conditions or such easily leading to inflammation, as the resin in them acts as a strong irritant. The same is true of lead plasters, but to a less extent. Following the example of Hebra, in order to use them in skin affections, lead plasters are now made into salves by the addition of more fat (Ung. Diachyli Hebra).

* Vol. ii, p. 366.

Concerning the application of salves, the clinical master Hebra taught us not to apply them in loose, uneven patches with the finger, but evenly spread on lint as a poultice. For this purpose liniments, and especially refined lard, do very well and the salve treatment by Hebra, as it meets most of the requirements of the above-mentioned conditions, (especially *a* and *b*) has shown wonderful results. Salves and liniments however have this disadvantage, namely: their principle constituent consists of fat which is very apt to become rancid and one has also little guarantee that undecomposed fat has been used by the apothecary. Again the fat very soon decomposes on the skin itself, splitting up into glycerin and sebacic acid, especially when aided by the secretions of that organ, and thus produce very frequently intense irritation. For this reason, it happens that symptoms of an irritated condition of the skin, especially in diffused acute inflammatory swelling, as in the widely spread eczema, are often intensified. Therefore at the very moment when the subjective feelings of the patient are agonizing and immediate relief is sought for, no form of liniment or salve will be borne. Sometimes during and on account of this treatment new inflammatory conditions arise. Finally a great deal of bandaging is necessary to keep the salve on the parts and in some parts of the body this is accomplished with great difficulty.

I will return to these points later on and state how to evade some of these troublesome complications, especially with reference to acute and inflammatory diseases of the skin.

Considering the last named modes of application (the use of tinctures and dry powders) one sees at once that they are very deficient. Tinctures irritate, and by their rapid evaporation deprive the skin of heat and disturb the circulation, and make the skin dry and brittle. Finally, of all the above-mentioned requirements (*a*, *b*, *c*, *d*,) powders only dry up the fluid excretions and in so doing, very frequently materially aid the formation of the detrimental crust.

Thus one sees, that there is room for great improvement in the external treatment of affections of the skin, as it was formerly practiced.

Of late years great activity has been shown, amongst dermatologists, in this direction; and first of all Unna, of Hamburg, then others in Austria and foreign countries, have made propositions in the way of applications of remedies, to obviate these evils, which have not been without success. We will here discuss a few of them and begin with those used in the external application of remedies to the skin, in non-inflammatory (mostly chronic) processes.

The treatment of chronic processes of the skin has lately made great strides, by the introduction of remedies which were formerly unknown or not used for this purpose. To these belong salicylic acid, Goa or Araroba powder, Chrysarobin or Crysophanic acid (Balmanno Squire), Pyrogallic acid (Jarisch), and Naphthol (Kaposi and E. Ludwig).

Great success has been obtained by the use of these remedies; their mode of application was mostly in form of powders and salves, then in solution or suspended in some fluid, the last-mentioned forms being applied with a stiff brush.

That powders are of very little value in the treatment of chronic cutaneous affection, need not be mentioned; but the tinctures and salves of several of the above-mentioned remedies, especially Chrysarobin, cause very frequently severe local irritation of the surrounding tissues. To obviate these evils, which very seriously influence the treatment, Fox, Sesemann, Pick, and Unna have proposed vehicles, by which the remedy Chysarobin could be limited to the diseased places alone and prohibit the soiling of the clothes and linen.

According to Fox, Goa powder is formed into a paste by the addition of water, applied to the psoriatic part and kept in position with collodion.

Sesemann employs a mixture of chrysarobin 0.6 gm. (10 grains) with collodion 4.0 gm. (3 j) and

paints the patches with this mixture every second day.

Pick, recommends the use of Chrysarobin-Gelatine of different strengths and paints glycerine over the gelatine after application.

Unna proposes "Chrysarobin plaster mulle"* and lately he and Beiersdorf advise a modification of Pick's method, the glycerine being added while the mixture is prepared.

Fox's method seems to be very cumbersome and both his and Sesemann's are unpractical, because collodion is unfit for application to the skin; it soon becomes hard and brittle whether in vessels or on the skin, on which it causes painful tenseness and dryness and above all irritates; the brushes become stiff, covered with cotton fibres and useless after every application. Finally Chrysarobin causes more irritation in combination with collodion than in salves.

The "pflastermulle" of Unna, have also proven to be unpractical, as they require bandaging in order to be kept in place and on this account cannot easily be confined to the psoriatic patches.

After many trials with all these methods in my department at the polyclinic, by my assistant Dr. Kohn, most excellent results have been obtained by Pick's method, the glycerine being added either while the mixture is being prepared (Unna), or the chrysarobin-gelatin painted over, after application. There is no doubt that Pick's method is a great improvement over all others.

Nevertheless there are certain drawbacks to the use of this method, which I will immediately describe, comparing it with a constituent, which I have myself used and after repeated trials with it, desire to propose it in place of gelatine.

I use namely: *Traumaticin (a solution of one part of refined gutta-percha in ten parts of chloroform), as a vehicle for chrysarobin. This remains in place without bandaging and adheres to the skin two or three days and even longer, without alteration. The gelatin layer however,

1. By the friction of the clothes or of the limbs, peels off in a few hours and must be reapplied.

2. Traumaticin forms a much thinner and more delicate covering than collodion or gelatin and for this reason causes neither tension nor pain.

3. Traumaticin is of itself a neutral covering and protective remedy. Ten-per-cent. solutions, even when applied to large surfaces on children or on adults, have never caused irritation.

4. Traumaticin causes much more uniform pressure than glycerin, as the smooth and elastic guttapercha, by its nature, adapts itself better to the skin, while gelatin must either be mixed or painted over with glycerine to do this.

5. The manipulation with traumaticin is much easier than with gelatin. The solution can be prepared on short notice and immediately applied to the whole surface of the body. As chloroform evaporates slowly, comparatively, and as gutta percha only gradually hardens, the painting over with a stiff brush, can be combined with a rubbing in of the solution, so to speak, which has the advantage, that the still adhering scales are macerated, rubbed off, and in this way the chrysarobin is applied directly to the bare and bleeding psoriatic patches.

Gelatin, however, must always be heated before application and we must always wait until the brush, dipped into the hot mass, has cooled a little. It thus very frequently happens that the gelatin mixture already hardens on the brush. Just this rapid hardening is a very serious disadvantage to its use and renders manipulation more difficult. The repeated dipping of the brush into the hot mixture, and the waiting until the mass has cooled sufficiently for application, is very fatiguing when large surfaces are to be painted. The whole process must therefore be regarded as inconvenient and unsuitable.

* Plaster mulle is simply Chrysarobin ointment spread upon muslin gauze.

* Liquor guttæ perchæ.

6. Traumaticin does not decompose; gelatin, even when salicylic acid has been added, very soon becomes mouldy.

7. Traumaticin is much cheaper than all other vehicles, for the reason that the apothecary has not so much trouble in preparing it.

The method of treatment of psoriasis, with the chrysarobin traumaticin solution, is briefly the following:

After the greater part of the scales have been removed by a soap bath, a ten-per-cent. solution is applied with a stiff bristle paint brush, to all the existing patches. When the eruption is limited to a few and small patches, the solution is applied daily; when large surfaces are involved, every second or third day. A previous soap bath, when the reproduction of scales is very great, or simply a local wash with soap, when the scales are scanty, is advisable. Many patches, after one or two applications, already appear a great deal flatter and are covered mostly around the borders only, with scales. After two, at most twelve applications, the infiltration and scales disappear and in their place white spots bounded by a red or violet-brown line appear.

In a few cases of limited extent, the psoriatic process was stopped in from three to six days, by daily application, without bathing or washing.

In spite of the frequent application of the remedy to the face, and in psoriasis universalis, to almost the whole external surface of the body, no inflammatory conditions of the healthy tissues, in form of conjunctivitis, diffused redness, painful swelling, acne, furuncles, eczema, or as fever, or disturbances of the whole general organism were observed.

In order to show the good results obtained in psoriasis by this method of treatment, with regard to extent and situation of the disease, as also of the length of time required for the disappearance of the eruption, I will add a few cases from the case-book of Dr. Kohn, which were lately treated at the polyclinic.

A. B., thirty-six years old, servant, Case No. 1716. Has had psoriasis for fourteen years, her brother also. Stat. præs. Oct. 1st, 1882: Psoriasis universalis from head to foot. Oct. 2d, patient takes a soap bath and every second day, chrysarobin or traumaticin is applied. After three or four applications, patient ordered to take a bath. After four baths and ten applications, patient discharged as cured.

K. W., an official, thirty-nine years old, Case No. 165, states that he has suffered with psoriasis for several years. Psoriasis on both legs, knees and elbows. On 31st of January, 1883, patient ordered soap bath and applications of chrysarobin traumaticin every second day. After two baths and six applications, cured.

J. St., thirty-seven years old, conductor, Case No. 187. Has suffered for years with psoriasis. Stat. præs. Feb. 5th, 1883: psoriasis guttata on the trunk, both knees and elbows. Bath on 5th of Feb. Chrysarobin traumaticin applied once daily. After six applications, cured.

J. Sp., dressmaker, twenty-one years old, Case No. 251. Has had psoriasis for eight years. Stat. præs: psoriatic patches on the trunk, back of the neck, the ears and both the upper and lower extremities. Feb. 14th, a bath and applications of chrysarobin traumaticin every two days. After ten applications and three baths, cured.

A. W., school girl eleven years old, Case No. 409. Sick since three months. Stat. præs. March 15th, 1883: Large diffused psoriatic patches on the back, the chest, upper and lower extremities, also on the knees, elbows, and in the inguinal regions. Began on the 15th of March with a bath. Applications every second day. After two baths and eight applications, cured. The second bath was ordered after the fourth application.

W, G., type-setter, thirty-eight years old, Case No. 461. Sick since three months. Stat. præs. on 21st of March, 1883: On both shins a few small

psoriatic spots. After one bath and seven applications, cured.

A. B., school girl, ten years old, Case No. 512. Sick for three weeks. Stat. præs., on the 29th of March, 1883: On the extensor surface of both the lower and upper extremities, especially on the knees and elbows, again on the back and the abdomen and on the buttocks, scattered large and small psoriatic patches. After one bath and ten applications, cured. The last to heal were the patches on the knees and elbows. During the treatment new eruptions appeared, which, however, after penciling with chrysarobin traumaticin, disappeared long before the old patches did.

F. Sch., butcher, thirty-one years old, Case No. 361. Sick for five years. Stat. præs. April 4th, 1883: The whole body almost covered with crusts. Patient takes bath April 4th and chrysarobin traumaticin, applied every second day. After every three or four applications, a bath. After four baths and twelve applications, most of the patches had disappeared. Final result unknown, as patient did not return.

R. W., seventeen years old, servant, Case No. 583. Has been sick for five weeks. Stat. præs. April 6th, 1883: A few small psoriatic patches on the back and the extensor surface of upper extremities. After bath and five applications, (one application every second day), cured.

J. F., eighteen years old, student, Case No. 602. Has been sick for seven weeks. Stat. præs. April 10th, 1883: On the forehead, on the trunk, on the extremities and on the scalp, numerous patches as large as a silver dollar. After one bath and seven daily applications, cured. No conjunctivitis.

E. H., servant, twenty years old, Case No. 788. Has been sick for two months. Stat. præs. May 5th, 1883: On the scalp, the extensor surface of the lower and upper extremities, chiefly on the knees and elbows, small and large patches. After one bath and six applications, the patches on the extremities disappeared. Final result unknown, as patient went away.

A. G., carpenter, thirty-five years old, Case No. 905. According to statement, for ten years, patches appear in the summer and disappear in the winter. Stat. præs. 23d of May, 1883: Small and large patches on the whole surface of the body, especially on the knees and elbow. After one bath and four applications, twice a day, cured.

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Parasitic diseases, herpes tonsurans, eczema marginatum and prurigo can be treated in the same manner. In prurigo, chrysarobin traumaticin was applied in ten per cent. solutions to adults and in five per cent. solutions to children. Usually the itching was immediately alleviated. In a few cases, after two to six applications the nodules had disappeared. That chrysarobin, however applied, does not prevent the recurrence of the disease, need not be mentioned, and the word *cured* above is only to be understood as meaning that the existing patches had disappeared.

I have also to add that traumaticin is as good an excipient for pyrogallic acid and for salicylic acid as for chrysarobin, In another article I shall report the results obtained with these and other remedies. —*Wiener Medizinische Wochenschrift*—St. Louis *Medical and Surgical Journal.*

On Giving Rest to the Digestive Organs by the Use of Peptonized Food.—Everyone knows and understands the great need for giving rest to organs in the carrying out of a rational line of treatment —especially in regard to organs that are inflamed. We often want in our practice to give entire repose to organs; yet we have to confess our inability, for want of knowledge and means, to fulfil the indication; again, having the means at hand, we hesitate lest the very inactivity we *could* bring about should imperil the well-being of other organs or even of the whole being. But our ignorance and inability of to-day give place to-morrow to knowledge and ability; hesitation is changed to confidence and safe action. We must always have a great deal more of physiological knowledge than we can make use of. Yet many workers are digging at the physiological quarry, and continually material is being carried away to be used with effect in the building up of our ever-perfecting house of Practical Medicine. And a good deal of shaping and fitting is needed, and much patient trial, before a method or a means can be safely considered fit for the storehouse of practical precepts—to be acted upon with certainty, by all for the common good.

Now, it is not so very long ago that there was got out of the physiological quarry some material which, now shaped and tried, is at the disposal of everyone to secure absolute physiological rest for the stomach in many conditions where such rest may be more or less urgently needed. The preparation of peptonized food is one of the most recent and acceptable of the many practical applications of physiological science to practical medicine. In this paper I propose to speak of the treatment by peptonized food in general —its foundations in physiology—and this as a prelude to the examples of its use in a particular form of disease—gastric ulcer, to wit—which are given in another part of this book.

But first let me say a few words about this physiological rest that we so often desire to compass as preliminary to our treatment, or as the chief part of it. The term itself, physiological rest, is perhaps not a good one, but I mean this by it— the relief of an organ from some or all of the work incident to its special functions. Organs have work to do beyond that which is necessary to their own life, and it is from this additional and, for each organ, special work we often need to spare organs. As yet, it must be confessed, we are very far from knowing how such relief and rest *could* be given to most organs of the body. In respect of the brain or spinal cord, for instance, with such means as we have, unless we extinguish altogether their proper functions, we are confronted with incidents and consequences which make us hesitate to use our means except when urgency and hopelessness demand our action.

Disease may sometimes secure rest from special functional activity whilst not extinguishing the life of the organ or part. Special function is in abeyance in the lower lobe of a lung when it is the seat of croupous pneumonia; air is excluded, aeration is impossible, all the activities pertaining to the special function of the lung are laid to rest. Now, in certain forms of phthisis the lung has not only to bear the burden of its own diseased state, but also the burden of its special function, and this when already lamed by disease. So that, the having this rest may be in the pneumonic lung a help, and the want of it may be in phthisical lung a hindrance to the proper recovery from their respective diseased conditions. We often desire in our treatment to give rest to organs by restraining mechanical movement. Thus, we may strap the chest in pleurisy; or restrain peristaltic action in the intestine by means of opium. But our task is not so easily made good in regard to most organs.

The stomach is a very difficult organ to deal with. To give the stomach the complete rest we often need to give it we must arrest motion *and* special function. In the presence of structural disease it will not do to use half-measures. There is nothing for it, in order to give the stomach relief from all its work, but to withhold from it all ordinary proteid food, all stimulus of whatever kind.

Let me recall some of the knowledge we have as to the stomach and its work. As to the movements of the stomach: these do not seem to depend on mere fulness of the organ, or amount of food in it; they are slight and feeble at first after a meal and when the stomach is fullest; they grow in strength as digestion goes on; they keep pace with the acidity of the con-

tents of the stomach—the more acid the more movement, the less acid the less movement. When quite empty the stomach shows none of its peculiar muscular action, and it is then contracted. We know little of the nervous mechanism of the gastric movements. It is, however, significant that after section of the vagi (the only nerves that seem to be concerned in the movement of the stomach), and irritation of the peripheral ends, movements are set up *only* if the stomach is full; there is no response when the organ is empty.

As to the special function of the stomach, its secretion of gastric juice: We know that slight mechanical stimulation causes a slight pouring out of the secretion; that the greatest amount of effect in this direction is caused by the presence in the stomach of a dilute alkali—even the presence of a small quantity of saliva causes a flow of gastric juice. When the stomach is empty the mucous membrane is pale and grey; the surface of the empty stomach is barely moist, and yields no decided acid reaction (Leube). The influence of nerve action upon the secretion of gastric juice seems to be small.

From all we know, it would seem as if the amount of muscular action in the stomach depended more upon the quality and state of the contents of the organ than upon mere mechanical stimulus. And as regards secretion of gastric juice, it would seem as if this too, depended upon the quality and state—especially the chemical state—of the contents of the stomach.

I think we may say this with certainty — that we *can* arrest motion *and* secretion in the stomach, and so give physiological rest to the organ. But we can only and certainly and completely arrest motion *and* secretion by entire withholding of food.

Yet, after the reflection which all the facts of the case invite, it seems to me that some further considerations are suggested. The actions of the stomach (both muscular and secretory) seeming to depend upon qualitative properties in the food—whatever they may be,—it is as if the actions went hand in hand with the amount of work required to be done. And we get this suggestion, which may be in the nature of a principle, that the more the ingesta approach the qualitative state of the completely digested food — in so far as stomach digestion is concerned—the less will the activities of the stomach, both muscular and secretory, be called forth. Certain it is that the clinical results we gain by acting as if this suggestion were a well-ascertained principle, go far to confirm its reasonableness and its foundation in fact. Wherefore, I think we may go further and say: that we may rest the stomach more or less by feeding it with ingesta already so altered in state and quality of matters which have undergone complete digestion.

In some organs function goes on well enough for the general wants of the body, even though a part of the organ be inactive from disease. But, for the stomach, abeyance of special functions means a cutting off of the source of nourishment and life from all other organs, and even the whole organism. If we cut off all supply of nutrient material through the stomach, we must, to support life, find some means not only to convey some nutrient material into the circulation, but to convey it in a digested form —and this means in something more than a soluble form.

Everyone knows that the work done by the stomach is upon the proteid elements of food; that under the joint influence of heat, acid and ferment the proteid food-stuffs dissolve and break up, and become changed into highly diffusible peptones. The work is not, however, quite so simple as it may appear to be. The process of gastric digestion is a complex process, and not yet so unravelled as to enable us to dipense with theory. Speaking broadly, the process is essentially a chemical process—of that kind called *hydration*, or hydrolytic decompostion—whereby the large, complex and unstable molecules of protein split up into definite and more stable constituent substances; whilst at the same time a change in physical state occurs, the insoluble colloid being changed into soluble and highly diffusible crystalloids. This change is effected through the agency of the ferment, pepsin, in the presence of water and acid. And a salient point in regard to these changes is this; that in the more strictly chemical metamorphoses during digestion, molecules are so re-arranged as to provide for reconversion, after absorption, into the proteid form again, and thus to aid in those synthetic changes upon which the building-up of tissues depends. The change from proteid to peptone, in the stomach, is effected in stages, and with the appearance of intermediate products. A proteid, undergoing stomach, or peptic, digestion, seems to split up chiefly into two groups—so called anti-albumose and hemi-albumose—from each of which two somewhat differing peptones are formed. One of these peptones—anti-peptone—is the final and completed product; it is complete in those properties which fit it for immediate introduction into the circulation, and accordingly, in the stomach, it is at once absorbed. The other peptone—hemi-peptone—may be said to be incomplete; it is capable of being still further split up and changed before absorption. But not in the stomach or by peptic digestion. This further change takes place in the small intestine, and through the agency of the ferment of the pancreatic juice, trypsin, in the presence of water and alkali.

As is well known, the pancreatic juice is capable of converting proteids into peptones; and the mode of conversion is on the same lines as in the case of the gastric juice, yet differing in important ways. When trypsin acts, in proper conditions, upon a proteid, two groups of intermediate products are formed—anti-albumose and hemi-albumose. Comparing these two with corresponding products of peptic digestion, we find that there are certain differences between the tryptic and peptic products; those formed in the stomach are akin to syntonin or acid-albumin; those formed in the intestine are akin to alkali-albumin. Further, whilst pepsin has no power to split up or otherwise alter the properties of either of its peptones, trypsin has the power to split up and alter one of its peptones, the hemi-peptone, to wit. Pancreatic juice can do, in fact, all that gastric juice can do in the way of peptonizing proteids, and something more — it can split up hemi-peptone into leucin and tyrosin and other less important things. Now leucin is a fatty body (amido-caproic acid), and tyrosin belongs to the aromatic group, and is akin to benzoic acid; they are crystalline nitrogenous bodies, and their capacities in regard to metabolism are great. Besides the digestion of proteids, pancreatic juice can effect the digestion of fats (aided by the bile) and of starch.

The question next arises—Can we imitate and bring about out of the body the processes of digestion, with the results just now set forth? If we can, the tryptic or pancreatic process of digestion is clearly the best to imitate. And there is no longer any doubt that we can in all essential points bring about out of the body to raw material the same changes the same changes that tryptic or pancreatic digestion brings about in the bowel to our food. Long ago, by means of pepsin (prepared artificially from the actively-digesting stomach of the pig) and acid and heat, the process of gastric digestion was fairly imitated out of the body. At the present day, by means of pancreatic extract and alkali and heat, the more complete process of intestinal digestion is limited almost exactly and easily out of the body, and now daily in our hospitals, and even in private houses. And in this way a great variety of pleasant foods are prepared, whose use, in a ready-digested form, is attended with much success.

As to the means used in artificial digestion—peptonization, as it is called — first, we must have the special ferment. It is found that by treating the pancreas of the pig with dilute spirit a very active extract of the pancreatic juice can be obtained.

Active and efficient extracts of fairly constant strength are now made on a large scale in commerce, the extract known as Liquor Pancreaticus being, perhaps, the best. The natural ferment being thus at hand, for the rest it is a mere matter of being able to secure the proper physical conditions—temperature, and alkaline state, and time—in order to digest artificially almost any of the chief food-stuffs we please.*

Now, finally, in order to secure complete rest to the stomach, we need to introduce into the circulation the food we can thus artificially digest through some channel other than the vessels or membranes of the stomach and small intestine. It is well known how little we could do in the way of supporting life, for more than a day or two, by the use of what I must now call the old-fashioned nutrient injection. And the reason is clear; we could not reduce the food before injection into the rectum to a soluble and peptonic form. With the means now at our disposal we can, out of the body, reduce proteids to the soluble and peptonic form; and we can at the same time, and by the same agency, convert starch into dextrin and sugar, and we can peptonise milk. We can prepare an enema which is, in its likeness to digested chyle, nutrient indeed. We are, therefore, limited only by the capacity of the rectum to absorb such food, in our efforts to support life for many weeks whilst we give the whole alimentary canal absolute rest from all digestive work. Now, it has been established experimentally that peptones and sugar have been completely absorbed by the large intestine after injection *per anum*. We need, I think, no other scientific proof than this of the certainty of absorption, after rectal injection, of soluble and peptonized food. —W. H. Spencer, M. A., M. D., Cantab, Senior Physician to Bristol Royal Infirmary, *Bristol Medico-Chirurgical Journal*, March, 1884.

Clinical Records—Two Cases of Gastric Ulcer Treated by Peptonized Enemata.—A. C., æt. 20, dressmaker. Admitted to Bristol Royal Infirmary, under Dr. Spencer, on April 9th, 1883. Had been under medical care for previous two or three years on account of anæmia and palpitation. Pain and tenderness at the epigastrium, made worse by food, and sickness for three months; has had frequent fainting fits. Three days before admission vomited a teacupful of dark-brown blood. On admission, extremely anæmic and weak; much pain, especially after food, and tenderness at epigastrium; no appetite, systolic pulmonic murmur; pulse 12, feeble; temperature normal. April 10th: Bowels opened by simple enema; motion very dark. April 11th: Vomited about 6 oz. of blood and clot; this repeated to same amount later in the day; motions quite black. April 13th: Nutrient enemata commenced to-day; to have no food or medicine by mouth. Each enema consisted of—Brandy, half an oz.; half an egg; Brand's essence of beef, two drachms; peptonized milk to 4 oz. An enema was given every four hours, and once in the twenty-four hours the bowl was washed out with luke-warm water. Two days later, on account of thirst, was allowed a very little peptonised milk to sip. No change was made in this treatment until April 27th (the 15th day). Then, there having been no vomiting, pain or hæmorrhage, nor discomfort of any kind, and the patient having improved greatly in appearance, the enemas were discontinued, and the patient was fed by the mouth with peptonized milk. In two days ordinary milk and lime-water was substituted; then beef tea was added. On May 2d, chicken was allowed. May 7th: There had been no symptoms, and patient felt quite well; was then put upon pills of sulphate of iron and carbonate of potash. May 9th: Patient got up. May 16th: Patient left the Infirmary. She continued to take the pills, as an out-patient, for some time, and finally was completely cured of the anæmia. In January, 1884, the patient was maintaining her health, was of good color, and said that she had never felt so well in her life.

F. S., æt. 26, domestic servant. Admitted under Dr. Shaw. Had suffered from indigestion for a year, more severely for the last six months, but had never vomited. On December 14th, 1883, while walking in the street, became suddenly faint, and then vomited a large quantity of blood and food; was taken to Infirmary, where on arriving she again vomited, a pint of "coffee-ground" being brought up. Was given a hypodermic injection of ergotine, and placed on diet of milk and beef-tea. Heart, lungs and urine revealed no abnormality. December 15th: Ordered bismuth mixture. Two attacks of hæmatemesis, amounting to two pints, preceded by gnawing pain in epigastrium. December 16: Stomach rather distended; no tenderness on palpation. Tongue, white fur. Pulse sharp and collapsing. Tarry motion passed after simple enema. No vomiting. December 17th: No vomiting; no pain or tenderness in epigastrium. Ordered bismuth and morphia in powder, and ice to suck. December 18th: Tarry motion after enema. Two attacks of hæmatemesis—22 oz., preceded by feeling of faintness, but no pain. Ordered Pul. Acid. Tannic. gr. x. quartis horis sum.; nothing else of any kind whatever to be taken by the mouth, but every four hours enemata, consisting alternately of 4 oz. of peptonized milk and of the peptonized solution of beef, to be administered regularly day and night. Patient excessively blanched. December 19th: Well able to retain enemata; bowels not moved. Vomits after tannic acid. Complains of extreme thirst, but no pain. Pulse sharp and jerky; well-marked bruit in pulmonary area. December 20th: Half-doses of tannic acid vomited, but without trace of blood. Bowels not moved. Free from all pain. Allowed a little iced water by mouth, and ordered Pil. Opii (gr. ½) ter die. December 23: Bowels still unmoved. Ordered twice daily one of Slinger's nutrient suppositories; treatment otherwise unaltered. December 24th: Bowels moved during night; motion light-colored and loose. No vomiting. Some pain, but no tenderness in epigastrium. December 27th: Vomited twice yesterday, thin fluid, without trace of blood; neither nausea nor pain before vomiting. Bowels moved; motion light and loose. Still very thirsty. Tongue dry. Nutrient enemata increased to ℥ vj. each, as they are retained without difficulty. December 28th: Vomited twice. Pale, watery motion passed, showing no sign of blood. Opium discontinued yesterday. December 31st: For last two days there has been diarrhœa, with griping pains in bowels; motions very offensive. Ordered to take creasote in pill as well as opium, which was recommended. January 22nd, 1884: Pain and diarrhœa relieved; bowels moved once to-day. Tongue dry, with brownish fur. No ifficulty in retaining enemata. January 7th: Vomiting continues absent. A light-colored motion passed on the 5th. Tongue moister, and patient begins to feel hungry. January 8th: A light loose motion passed to-day after three days' confinement. To-day patient is allowed to have the peptonised milk by the mouth, having taken no nutriment by that method for twenty-one days. Enemata to be continued every four hours as before, the peptonized solution of beef alone being used for that purpose. During the preceding three weeks patient has gained considerably, *probably* lost weight to some extent, and not perceptibly improved in respect of the deficiency of hæmoglobin caused by the hæmatemesis. January 11th: Peptonised milk by mouth increased to two pints. January 14th: One egg beaten up, added to food by mouth; nutrient enemata continued as before. January 18th: Bowels are moved daily; motions are rather dark and loose. Has had arrowroot in addition, by mouth, since 16th. Nutrient enemata four times in the twenty-four hours. January 21st: Patient lifted out of bed and weighed; weight, 7st. 3lb. January 22nd: Milk cake added to diet. January

* For details as to the preparation of peptonized milk, beef-tea, gruel, and other farinaceous foods, consult the article on Peptonized Food, by Dr. William Roberts, in Quain's *Dictionary of Medicine*, or Dr. Roberts' *Lumleian Lectures*.

24th: Has no epigastric pain now. Pills of opium and creasote discontinued, and pill of aloes and iron given instead. Nutrient enemata to be left off to-day, having been employed continuously for thirty-seven days. Throughout patient retained them easily, and suffered no inconvenience from them. January 28th: Weight, 7st. 6lb. Bread added to diet, and beef-tea given instead of the peptonised milk. January 31st: Bowels confined; pain in the chest. Aloetic pill increased in strength. Fish added to diet. February 4th: Weight, 7st. 11lb. Bowels now moved daily. Patient allowed to get up for an hour to-day. February 11th: Weight, 8st. 3lb. Gets up for three hours daily; has some giddiness on first rising. To have meat finely minced for dinner. February 12th: Hæmoglobin estimated at 60 per cent. Corpuscles at 3,960,000 per cubic millimetre. February 18th: Weight, 8st. 7lb. Is up all day now. Constant slight pain in chest not influenced by food; not conscious of any other discomfort. Has not vomited since December 28th. Will be discharged in a day or two.

This case is a good illustration of the efficiency of peptonised enemata to maintain life for a prolonged period, without any assistance from digestion by the stomach and small intestine. It also shows the great value of rest to the stomach in the treatment of gastric ulcer. Notwithstanding the alarming hæmorrhage from the stomach, none such occurred again when, by no longer putting digestible substances into the organ, the fluxionary hyperæmia of digestion was no more induced. That the powers of digestion were increased by rest rather than diminished by disuse, is is shown by the rapid gain in weight when a moderately liberal diet permitted its occurrence.—Drs. Spencer and Shaw, Physicians to Bristol Royal Infirmary in *Bristol Medico-Chirurgical Journal*, March, 1884.

Pancreatized Milk in Gastric and Intestinal Disorders.—My attention was first directed to the use of pancreatized fluids, chiefly milk, in the abovementioned disorders a few months since, while serving as one of the physicians to the orphans' asylum. At this institution the rule had been heretofore, as the matron informed me, for almost all of the bottle-fed infants to die within a few months—and often a few weeks—after admission, from the digestive troubles incident to their unnatural mode of life. Up to within a short time, this mortality had not been in any degree lessened by any of the various methods of treatment employed. To my predecessor, Dr. Henthorne, belongs all of whatever credit may be due for the introduction and use of the pancreatized milk. Its benefit was at once apparent in the sudden reduction of the death-rate, so that it soon became the rule for infants to live instead of to to die. Upon assuming my duties at the asylum, I directed the continuation of Dr. Henthorne's plan of treatment, and extended it to embrace other conditions. Without a wearisome recital of the details of all the cases, I think I am justified in coming to the following conclusions:

First, that pancreatized milk is one of the best, if not the best remedy, for vomiting, whether coming from simple irritability of the stomach from some obscure cause, from a firm coagulation of the casein of the injested milk, or what may seem strange, even in inflammatory diseases of the stomach. As examples of the first class, I would bring forward those cases in which, in the absence of any sign of gastric inflammation, all substances taken into the stomach are immediately returned, and often with considerable force. Among infants, comparatively few cases of this description came under notice, but a considerable number were seen among children and adults recovering from acute diseases. In but one instance did it fail to relieve—the first case under my care—and that I lay to the worthlessness of the sample of pancreatin then on hand: I trusted too implicitly in the knowledge of the nurse, who informed me that she had used it extensively, and that it was working all right, (referring to the action of the pancreatin on the milk). I was present during one of the spells of vomiting a few days before the infant's death, and noticed some coagula in the vomited matter. This lead to investigation, and an immediate change in the sample employed, but though relief was obtained in a few hours, the child died next day with a return of the trouble. As a most peculiar instance of its power I may mention a case seen by me in connection with a physician a few miles out of town. The patient, a lady in the neighborhood of fifty years of age, was seized with incessant vomiting, coming on after a slight surgical operation, and resisting all of the usual remedies, but yielding immediately and almost completely to the milk. After the death of the sufferer, which occurred from another cause, a post mortem showed adhesion of the lower margin of the omentum to the left crural ring, at which point there had been a femoral hernia during life. The stomach had been displaced somewhat downward by this band, which was drawn so tightly as to encroach very materially upon the calibre of the transverse colon. I can offer no explanation of its mode of action in the foregoing cases. It could not have been by rendering the milk bland and unirritating alone, as in some of the cases it was impossible to retain even pure water. The second class, viz: those suffering from coagulation of the casein in the milk, and subsequent vomiting, were by far the most numerous, and the part played by the pancreatin in their relief was obvious. While I can not speak of it too highly in the previous class, it is in these that we would expect to find it most efficacious. I will not take the time to quote a list of cases familiar to all, but will say that where, in bottle-fed infants, the milk is rejected in a curdled condition, sometime after being taken, the addition of a good article of pancreatin to the milk will almost invariably relieve. In inflammation of the stomach, my experience, from the very nature of the case, must amount to nothing. But two instances came under notice. One, a man of forty-one years of age, had been sick with vomiting and burning pain in the stomach for several days. Nothing could be retained. Water, which he craved incessantly, was swallowed only to be immediately vomited. Burning pain and tenderness in the epigastric region, character of the vomiting, rise of temperature, and condition of the pulse warranted, I think, my diagnosis of acute gastritis. After trying all the remedies of which I knew, such as ice, morphia, bismuth, alkalies, and the now fashionable infinitesimal doses of calomel, without effect, I fell back upon the use of pancreatized milk, solely for the relief of vomiting. Its effect was complete and immediate. In another, which I was lead to diagnose gastric ulcer, the result was equally good. In the various diarrhœas of infants, both inflammatory and non-inflammatory, it has given great satisfaction. So thoroughly am I convinced of its power, that I feel as if I could check a diarrhœa as completely with bismuth and pancreatized milk as with the most approved doses of opium. In fact, since its introduction into the asylum, not a drop of paregoric or a particle of any astringent has to my knowledge been used in the treatment of infantile diarrhœas or colics. In those cases of sudden cramps, coming on immediately after eating, and followed by a free liquid evacuation, it has only to be tried to be recommended. In one rather numerous class of patients, on the other hand, it has been perfectly useless. I allude to that slow wasting away of the body, without diarrhœa, or any decided symptom, coming on in hand-raised children. One death occurred, and another is at the present time failing so that, warned by previous experience, I am led to give an unfavorable prognosis. In conclusion, it may be well to give our method of preparing the milk: To each pint of milk we add ten grains each of bicarbonate of soda and pancreatin, or a teaspoonful and a half of liquor pancreaticus, dissolved in a gill of water, the whole to be kept blood-warm for the space of an hour before using. The first

effect of the addition of the soda and pancreatin to the milk is to produce coagulation. This coagulum is dissolved in the course of an hour, the milk becoming clear and watery in appearance. It is said that the process should be continued until a slightly bitter taste is developed, but I have found an hour sufficient. If left much longer, it becomes so markedly bitter as to be offensive to the taste. To prevent the "pancreatizing" going on at this stage, I commonly order the milk to be brought to a boil at the end of the time mentioned, if it has not to be used immediately. Success with this plan of treatment can only, I think, be assured when the samples of pancreatin are reliable.—Frank Morrison, M. D., in *Indiana Medical Journal*, March, 1884.

A Report of Three Hundred and Five Cases of Habitual and Temporary Constipation Treated with Cascara Sagrada.—Having had an opportunity of making extensive observations on the action of cascara sagrada in constipation, for the past seven months, it may not be uninstructive to others who are making use of this recent addition to our purgative medicines, to record, while attesting its great value, a few cases in which the exhibition of the drug has been followed by untoward effects.

With regard to the form of administration, I have generally used the fluid extract of Messrs. Parke, Davis and Co., combined with liq. bismuthi and bicarbonate of soda, in cases of atonic dyspepsia, which have been accompanied with temporary sluggishness of the bowels. In these cases, two or three ten-minim doses are usually sufficient to produce a first evacuation without any preliminary dose of other aperient medicine. The motions are, as a rule, soft, but formed, and unaccompanied by griping or tenesmus. In this kind of case, and in this dose, the best results have been obtained. In confirmed habitual constipation, the fluid extract, in my hands, has, after a time, begun to lose its effect, except in a gradually increasing dose. One grain of the solid extract, however, combined with two grains of extractum berberis aquifolium in a pill, taken night and morning, has successfully reduced the most obstinate habitual constipation of the bowels to regularity of action, though continued in the same dose for a period of five or six months.

Occasionally, however, the remedy is not well tolerated. Among strong men within the prison (whence 229 of my observations have been drawn), I have found violent and almost immediate vomiting follow a ten-minim dose of the fluid extract in three cases. In another man, a single dose of ten minims produced such griping as to render the administration of an opiate necessary; and, in addition, purged the man several times. I subsequently ordered this man half the dose twice daily, which produced two evacuations regularly. In private practice, ten minims, three times a day, has produced, in a man 65 years of age, exhausting diarrhœa (unaccompanied by pain, however), which it was somewhat difficult to arrest; while in another patient—a young woman of 25 years of age—two doses of ten minims, at an interval of not less than four hours, produced excessive diarrhœa, with vomiting, violent twisting pains around the umbilicus, cramps in the legs, a pinched countenance, and clammy perspiration. The effects in this case were, fortunately, of not long duration (four or five hours), and seemed to pass off as suddenly as they had set in.

I have used this drug in varying doses at all ages, from five months to seventy years; and with the exception of the instances I have mentioned, have found it extremely useful. At the same time, it is plainly advisable to use some caution in the size of the commencing dose, and to direct the patient to omit the medicine if the first dose causes much pain or other adverse symptoms.

Cascara sagrada is said to act chiefly by increasing the peristaltic action of the intestines. It is certainly not the rule for watery stools to follow the administration of the drug, while the griping occasionally experienced points to excessive muscular action of the bowels, raising the hope that it may prove of use in certain cases of fæcal retention, due to or inducing intestinal paralysis. I have not yet met with a suitable case of this kind in which to test the powers of the drug.—C. Emilius Thompson, M. R. C. S., Physician to Her Majesty's Labor Prison, Dry Creek, near Adelaide, South Australia, etc., in the *British Medical Journal*, March 22, 1884.

Bryonia, Asclepias, and Baptisia.—The two former of these medicines, whose special province seems to be to allay irritation of serous membranes, sometimes surprise us with their kindly and positive influence.

Well do I remember, some years ago, of attending on a Mr. F., æt. 40 years, German descent, usually healthy, strong and robust, but then suffering with severe pleuro-pneumonia, and most intensely with the pleuritic stitch, which was so interfering with respiration as to be alarming at times; and after prescribing the usual sedatives, aconite and veratrum for fever, with full doses of Dover's powder and morphia to control the pain, and feeling confident of early relief, I repaired to the country. But some hours after my visit, instead of the expected relief the pains in the chest became more severe and the interference with respiration more alarming, and another physician, my friend Dr. T. G. Matheny, was called to administer to him until my return. His prescription was tinct. bryonia and tinct. asclepias ää gtt., xx.; water, ℥ iv. M.; sig.: One teaspoonful every thirty minutes until pains were relieved, and every hour thereafter.

On my return and learning the above facts, having confidence in the intelligence of the physician, and seeing the relief approaching, I continued the above prescription, not resuming the opiates, which had been set aside. Next morning I found my patient almost entirely free from pain, and fever very much abated, perspiration well established, and my patient very cheerful.

During the week following the pains would occasionally return, but would again subside under the influence of the bryonia and asclepias. This repeated experience strengthened my resolution to study to know more of these remedies, and to more fully test them in other cases, which I did, usually with good satisfaction. After careful study and experiment, I find, as I believe, the physiological effects of bryonia to be sedative to serous membranes especially, and thus a remedy in irritation of such membranes, whether of the chest as in pleuritis, or in the joints as in articular rheumatism, or abdomen as in peritonitis, and more especially if the pains are lancinating and accompanied by a tension of the muscles of the affected part, and excessive tenderness on pressure or motion of the parts, accompanied with restlessness, high fever, hot skin, and hard chorded pulse. Asclepias, as a type of diaphoretics, certainly quiets the nervous system, brings down the temperature, induces perspiration, relieves pain in serous membranes, and is thus a valuable remedy in such inflammations, and especially when accompanied with a hot dry skin.

Although I have used baptisia for many years in my treatment of children in septic fevers, believing it to be antiseptic and thus antifebrile, I confess, however to many disappointments in its use, and a very imperfect knowledge of its real nature, and although we think we know more about it now than we did in former years, yet we know but very little, compared to what we believe is to be known of its therapeutic properties.

I remember reading an article written by Prof. Scudder, of Cincinnati, in which he regarded it as an antizymotic, and its antiseptic and antifebrile properties depending on its power to antidote a peculiar ferment or poison in the blood causing the attendant fever, and this having peculiar manifestation, different from any other poison, producing a peculiar dusky color of the face, like one who has been ex-

to severe cold. He recommended it in cases where the sepsis produces a deep red or violet color of the mucous membrane, with brown or black shade or tinge, and especially where there is foul breath, with a tendency to ulceration, and since using it in that class of cases, and in ulcerative sore mouth and throat, especially where there is any putrescence, both locally and internally, I am the better pleased with its effects.

Dose to child:

Tinct. baptisiæ gtt. to xx.
Aquæ dest., ℥iv.

M. S. One teaspoonful every one or two hours.—From paper by Dr. Casebeer in *Journal of the American Medical Association.*

Dewberry Root in Diarrhœa and Dysentery.—Dr. John S. Lynch, in the Transactions of the Medical and Chirurgical Faculty of Maryland, 1883, has an interesting article relating to the astringent influence of *rubus procumbens*, or dewberry root, from which we take the following:

In our eager search for new and efficient remedies, we are very apt to forget old and often most valuable ones. In no instance is this more of a truism than in the subject of this brief note. This medicine has been known to the profession for hundreds of years as a valuable anti-diarrhœa and dysenteric remedy, but it has been principally utilized in domestic practice. It belongs to the age of crude drugs when roots and herbs were given in bulk, before organic chemistry had succeeded in separating their active principles, or pharmacy had learned to make elegant and concentrated preparations of them. It has, therefore, I apprehend, fallen into disuse. The discovery of the active principle of all vegetable astringents in tannic acid, has led to the neglect of the study of the varying physiological effects of the various vegetables containing it, and has also led to the undue and untrue generalization that they all act alone by virtue of the tannic acid they contain, and are, therefore, only valuable in proportion to the amount of acid present. It is the *combination* of the various active principles of our drugs which gives them their specific action and determines their affinity for this or that tissue or organ or function of the body. Tannic acid, therefore, cannot represent the various roots and barks and leaves from which it is extracted, any more than ergotin or propylamin can represent ergot, or quinia, cinchona bark.

I have been led to make these reflections principally by the recent observations I have made on the use of rubus procumbens, in diarrhœa and dysentery. There are doubless many vegetable substances that contain more tannic or gallic acid than this, but none of these not even tannic acid itself, is half so efficacious in the disorders mentioned.

Two years ago I was attending a patient who was slowly dying of phthisis, who threatened to be suddenly cut off by an intractable diarrhœa. Doubtless you have all see the same thing, and some of you have seen it hundreds of times. After exhausting all the well-known astringents, and giving the largest doses of opium I dared to give, I at last thought of the old domestic remedy I had seen used when a boy with such success on my father's plantation, and which I had used in the South during the war between the States, in which one of the parties gained the dishonored preëminence of declaring for the first time in the history of civilization, medicines as "contraband of war."

In my search for the root I learned for the first time that a fluid extract could be found in some some of our shops. A teaspoonful of the latter with 20 drops of deodorized tincture of opium was administered every second hour with the effect of arresting the diarrhœa promptly and completely. The man lived for two months afterwards, and though he was several times threatened with the diarrhœa again, one or two doses promptly arrested it, and he was saved the pain and exhaustion of this most disagreeable and fatal complication.

Since then I have used this fluid extract habitually in all cases of obstinate diarrhœa and dysentery, both in adults and infants, and it has never failed me in a single instance. In the summer diarrhœa of infants, I regard it as perfect a specific as any found in our materia medica, and I am glad to say that I have not lost a single infant from summer complaint during the two years I have used it.—*Va. Medical Monthly*, January, 1884.

On the Use of Lythrum Salicaria.—Dr. Campardon, in the Bulletin Général de Thérapeutique, extols the use of this remedy very highly in acute or chronic inflammations of the gastro-intestinal mucous membrane. In his opinion, the previous want of success in its use has been due to the way in which it has been prepared; as for example, it has been used more as a decoction than as an infusion—containing tannin and a large proportion of mucilage, as it does, a prolonged *coction* would destroy the mucilage. He cites cases of dysentery, of acute and chronic diarrhœa, particularly when dependent on an atonic condition of the intestine—or as observed in the convalescence of typhoid fever—and in the diarrhœa of children occurring in the course of dentition, where he has readily and easily checked the disorder. The drug has shown that it has not only a slightly astringent character, due to the tannin, but also that the mucilage quiets the pain, modifies the secretions, and manifests a general sedative action. The effect of the drug does not seem to be to produce the dry, painful constipation, as with bismuth, for example, but rather to restore the condition of the bowels and stools to their natural state. An excessive dose (10 to 12 grammes per day), will produce a gastric disturbance, giving the mouth a taste of the drug, an increase in the number of passages to sometimes six per day), and a diminution of the appetite. In affections of the buccal mucous membrane, as ulitis and aphthæ, the tincture of lythrum has been very serviceable. In coryza acute vaginitis with hypersecretion, chronic catarrhal vaginitis, vulvar prurigo, eczema and intertrigo, the drug, powdered and applied locally, has proved beneficial. In the acute stage of varicose ulcers, the powder of lythrum has lowered the temperature, relieved pain and hastened the formation of the cicatrical pellicule; the ulcer being washed morning and evening with a strong infusion of lythrum, and the powder renewed daily over the surface of the ulcer. Its usa has been recommended in hæmoptysis, but Dr. Campardon tried it in several cases without success.

The preparations are: Infusion—30 to 40 grammes of the leaves and incised stalks, to 1,000 grammes of water.

Powder—3 to 5 grammes in 24 hours, 1 gramme in a wafer as a dose. The highest dose used was 8 grammes, in a case of chronic diarrhœa of four months standing, which was relieved in less than three weeks.

Extract—2 to 4 grammes a day, in solution; children take readily a syrup made of 1 gramme of the extract to 30 grammes of syrup, given by the coffeespoonful each hour. The extract mixed with the powder to form pills of 20 centigrammes each, is more acceptable to some persons than the powder alone.

Tincture—20 drops on a lump of sugar, four or five times a day.

For external use—3, 4 or 5 tablespoonfuls in a sufficient quantity of water to form an injection or lotion—or dissolved in the tincture of salicylic acid (1 gramme to 25 grammes); two or three tablespoonfuls in a sufficient quantity of water as an injection or lotion.—*Journal of the American Medical Association.*

Gelsemium in Intermittent Fever.—After years of careful trial, I have come to use gelsemium in cases of chills with fully as much confidence as ever I used any of the preparations of bark. I was led to use it at first by reflecting on the entirely opposite effects of some medicines on the economy, in large and small doses. Those who use this medicine claim for it nervine, anti-spasmodic and febrifuge qualities of much power. After using it quite extensively in various cases of disease, I am led to believe it to be one of the most worthy remedies we possess, worthy of careful trial by those who have not used it. It will be found applicable to a great variety of abnormal conditions, giving satisfactory results in a greater number of cases than any other single remedy. But in this paper I wish to speak of its use in intermittent fever, chill fever, ague. Used in ordinary doses, it will not cure chills; given in doses of three to ten drops every two or three hours, it will not be likely to have the desired effect. If the stomach has been prepared for it by the use of a pill or two, or three, composed of podophyllin and leptandrin, with solid extract of hyoscyamus, half or three-fourths of a grain each, one at a time, gelsemium will arrest chills as often as any other remedy. I give the fluid extract in one-quarter to one-half drop doses once in twenty or thirty minutes, beginning usually three hours or so before the time of the expected chill. This for adults; children much less. If this does not succeed, I do not increase the dose, but lessen it.

I usually prepare the medicine for use by putting, say, ten drops into a teacup or tumbler, if for immediate use, and measuring in three or four teaspoonfuls of water to each drop, and giving in teaspoonful doses as stated above. If to be kept for a few days, I put in camphor or peppermint water, which helps to keep it sweet; or, where there is much headache, I put in bromide of potassium, and that helps to keep it. Where parties live at a distance, I add glycerine in place of one-fifth or one-fourth of the water, and then it will keep indefinitely.

This medicine, prepared in this way, will rarely fail to quiet any nervous chill or rigor after it is fairly under way. In such cases I give it sometimes as often as every five minutes in severe cases, and it has never failed me. I have never had occasion to use it in puerperal convulsions, but should not hesitate to use it as last mentioned, and should be confident of the best results. Some will spurn this remedy thus used, on account of its extreme simplicity and size of dose; other some, because of its cheapness and other reasons. A few will try it, and not being careful about the amount, giving too much, will be disgusted and discard it; while other few will try it faithfully and carefully, and the more they use it the more they will prize it. It is cheap, easy to take, and very effectual.—Dr. N. B. McKay, in the St. Louis *Courier of Medicine.*

Historical Notes on Convallaria Majalis.—The employment of the lily of the valley, as a remedy in certain conditions of valvular disease and cardiac weakness, has become more general since the publication in the Journal of an abstract, of Dr. A. E. Sansom's Lettsomian Lectures; and the preparations of this plant are commonly regarded as amongst the latest additions to the materia medica, although it is well known that the plant has been in domestic use amongst the Russian peasantry, for the cure of dropsy, for a very long period of time; and from its similarity of action to digitalis, we can readily understand its being curative, in many such cases, by its effect upon the heart and circulation.

I have lately met with an account of the use of this drug, in cardiac disease, as far back as the commencement of the seventeenth century, of which I give a translation. It occurs in an old Italian book of Commentaries on the Materia Medica of Dioscorides, by Dr. Pietro Andrea Matthioli (physician to the Emperor and to the Archduke Ferdinand of Australia), and was published in Venice in 1621. He says: "The Germans use lily of the valleys to strengthen the heart, the brain, and spiritual parts, and also give it in palpitation, vertigo, epilepsy, and also apoplexy; also as a remedy for the bites and stings of poisonous animals; to quicken parturition; and for inflammations of the eyes. For this purpose they are wont to prepare the wine from the flowers of the time of the vintage; and then infuse them in old wine for forty days in the sun, and subsequently distill and redistill (but not many times) along with lavender flowers, rosemary, and other aromatics. They then preserve it as one of the most precious things which are to be found amongst medicines and they call it 'aqua aurea,' and preserve it in vessels of gold and silver against sudden attacks. They even believe that, given to persons actually *in articulo mortis*, it is able to prolong life for several hours. In this, however," he drily adds, "they are not unfrequently deceived, as I have myself witnessed."

Amongst other interesting matters in this book, there are descriptions of experiments on criminals under death-sentence, witnessed at Prague and in Rome, under the Pontificate of Clement X, by Dr. Matthioli, on the effects of aconite and nux vomica, and their supposed antidotes.—Edward Drummond, M. D., in *British Med. Jour.*

Cascara Cordial.—Some remarks which I made in a previous volume of this journal on cascara sagrada or rhamnus purshiana, having led to a good deal of correspondence and much interested inquiry, I am led to extend them by calling attention to a form of preparation of the drug which seems to me to possess many advantages. I allude to the so-called cascara cordial prepared by Messrs. Parke, Davis & Co. In this preparation the intense bitterness of the uncombined drug has been most successfully overcome, and its administration to children thus rendered easy. I have prescribed the cordial in not a few cases, and can bear testimony to its useful laxative effects, and to the readiness with which it is taken by even very young patients. Again, I desire, in the interests of those who may be under treatment, to draw attention to the fact that a really valuable medicine, as this fluid extract of rhamnus purshiana, or the cordial prepared from it, really is, may be brought into discredit by less efficient though cheaper substitutes.

And that this statement may have its due weight, I think it well to state once more that I know absolutely nothing of the manufacturers, and that I am entirely devoid of any other interest in the drug than that common one which every physician must feel in his patients having dispensed for them what he prescribes, and not something else. I drew attention to a striking instance of this substitution in the last article. It is perhaps worth while mentioning a more recent and none the less striking one. A short time since some of our hospital patients—not alone mine, but those of one of my colleagues also, who largely uses this drug—began to complain of griping pains after its administration. Inquiries were at once made, when it was found that the so-called fluid extract of rhamnus purshiana that had been last supplied was not prepared by Parke, Davis & Co., and that it had not cost much more than half the price of theirs, and the matter was deemed of sufficient importance to lead to an order from the medical board that in future the genuine, though more expensive, preparation should always be procured.—W. Carter, M. D., M. R. C. P., LL. B., Lond., in Liverpool *Medico-Chirurgical Journal.*

Cactus Grandiflorus in Sexual Exhaustion.—Dr. Pitzer (*American Medical Journal*) says that while other remedies are required to effect a permanent cure, nothing will give more speedy relief in this condition than cactus grandiflorous. It immediately strengthens the cardiac plexus of the sympathetic and improves cardiac nutrition of the heart. The pulse becomes regular. The expression is hopeful, and

past sufferings seem to have been only dreams. It may be said that these symptoms are all secondary, and that cures cannot result from drugs prescribed at these. This is true, but no drug, no matter how effective in healing the original disease, can possibly effect its purpose so certainly and so speedily while the patient is laboring under the terrible nervous symptoms above narrated, which so quickly pass away under the influence of cactus. The primary disease has sometimes, to a great extent, disappeared, but continued long enough to excite the cardiac neuroses referred to. This secondary leslon has existed so long that it does not readily pass away, though the original disease be gone. Here the cactus is not only indirectly curative, but it cures in fact. In all these cases:

℞ Tinct. cactus grand. ʒ j.
Aquæ. ʒ iv.

M. Sig. One teaspoonful four times a day. In some cases it is combined with pulsatilla, in others macrotys.—*Gaillard's Medical Journal.*

Asclepias Incarnata.—A brief communication appeared in the Therapeutic Gazette (America) on the 15th day of November, 1883, in which it was stated that the Asclepias Incarnata, or, as it is commonly known, the white Indian hemp, had the reputation among the people of Ohio of possessing remarkable diuretic properties. Shortly afterwards a preparation of this drug was sent to me by Messrs. Parke, Davis and Company, of New York, and I have now been using it for the last three months with considerable success in a number of cases. My clinical observations have led me to the conclusion that its physiological actions may be stated as follows:

The Circulatory System.—It stimulates the cardiac contractions, and increases the blood pressure. For two hours after the administration of forty minims of the liquid extract, there is an increase in the strength and volume of the pulse. It steadies the cardiac contractions, and assists in restoring the rhythm of the pulse when any irregularity exists. The stage of stimulation is sometimes followed by slight depression of the circulation, and in order to maintain its stimulating effects, it should be repeated at intervals of three hours.

The Urinary System.—It is a speedy, potent, and reliable diuretic. I have found it to succeed admirably in cases where the best known diuretics have entirely and signally failed. It is invaluable in all forms of dropsy, but especially so in dropsy of cardiac and renal origin. I believe that it acts on the kidneys in precisely the same manner as digitalis.

One great advantage which it possesses is that it does not cause any gastro-intestinal disturbance; on the contrary, it frequently acts as a stomachic.

The root is the part which is used in medicine, and s said to possess all the medicinal properties of the plant. It may be administered either in the form of an infusion, or fluid extract. The latter preparation should be given in ʒ ss to ʒ i doses every three hours. Smaller doses are useless.—J. Hosack Fraer, M. B., in *Birmingham* (*Eng.*) *Medical Review*, April, 1884.

Peptonized Food in Dyspepsia.—Dr. John W. Brannan, of Colorado Springs, in an article read before the El Paso County Medical Society, and which was published in the Boston Medical and Surgical Journal, relates his success with peptonized milk, especially in acute dyspepsia.

It is easily prepared in an hour; it is very digestible, being in part digested before entering the stomach, and it is readily absorbed. The water, sugar and the salts of the milk are ready for absorption, and what is needed is some substance to prepare for absorption the casein and the butter.

Pancreatic juice is the ferment of the body that will accomplish this. Dr. Brannan, therefore, prepares milk in the following way: "Five grains of extractum pancreatis, and twenty grains of bicarbonate of soda are dissolved in four ounces of tepid water. This is added to one pint of fresh milk warmed to the temperature of the body, and the mixture is allowed to digest for one hour at the temperature of 100° F. The milk when ready should have a slightly bitter taste, or rather, after-taste. It should now be raised to the boiling point, strained and placed on ice, ready for use.

The casein is not completely peptonized, nor is the fat entirely emulsified, for if they are, by continuing the process of digestion for an hour longer, the milk becomes very bitter, and is consequently very disagreeable to the patient. Dr. Brannan believes that this preparation of milk will be found of service in cases of chronic dyspepsia. He calls attention to the different factors which tend to make the milk more assimilable for the stomach, viz., the bicarbonate of soda, the pancreatic extract, and lastly the boiling, which transforms a considerable amount of the casein into hemi-albuminose.—*Western Lancet*, February, 1884.

Manzanita.—Manzanita is a plant indigenous to California, and the leaves are the part of the bush used the preparation of the fluid extract. This has an astringent and a somewhat bitter taste. It is said to be an astringent tonic with a special action on the urinary organs, and has been recommended as a valuable agent in the treatment of gleet, vesical catarrh, incontinence of urine, etc.

Dr. H. W. Rand reports fourteen cases, twelve being cases of gonorrhœa and two of gleet. In about one-half of the cases there was improvement on doses of gtt. x to ʒ iss three times a day. In other cases there was no perceptible improvement after a week's administration and the treatment was changed. The appetite seems to improve under the use of manzanita, and no gastric disturbances are produced. Although it is said to be astringent, it does not seem to cause constipation. Dr. Rand thinks that it is contraindicated in acute cystitis, and he would hesitate to use it in a case of irritable bladder. From his limited experience he thinks that it may be advantageously used during the stationary or decreasing stage of gonorrhœa, or in a long-standing gleet where the older and well-tried drugs had failed to relieve or had disturbed the stomach.—*Proc. of Med. Soc. of Kings Co.*

Hoang-Nan in Hydrophobia.—Gingeol has recently made a communication to the Academie de Paris on this subject, with the following conclusions: 1. There is reason to believe that clinical experience will verify the opinion as to the good effects of hoang-nan in the treatment of hydrophobia. 2. The original practice, which consists in administering the drug by the mouth, should be rejected on account of the difficulty in swallowing and the eventual vomiting. 3. The drug can better be administered by the subcutaneous injection of an aqueous solution—1 to 10 of the alcoholic extract, or an alcoholic acetous preparation, every fifteen minims of which represent probably the active principle of three of the pills recommended, and given by Tong-King. 4. The maximum dose of the preparation cannot be formally indicated, but must depend upon the indications.—*L'Independente*, November 15, 1883. *Weekly Drug News*, April 5, 1884.

Hydrastis Canadensis in Painful Menstruation.—In one of the recent numbers of the Archiv. fur Gynäkologie, Prof. Schatz calls the attention of his colleagues to the value of tincture of hydrastis in many cases of painful menstruation, which hitherto have been supposed to need operative interference. The hydrastis contracts the vessels and lessens the genital congestion. Often by its use the pain attending the menstrual epoch is diminished or wholly removed. The preparation which Prof. Schatz uses and recommends is the fluid extract, as prepared by Messrs. Parke, Davis & Co., of Detroit, Michigan.—*Medical and Surgical Reporter*, March 1, 1884.